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EDWARD LEAMING, M.D. 7 West 63d Street
Assistant in Photography

EDWARD B. DURHAM, E.M. White Plains, N. Y.
Assistant in Mining

HENRY POWER, M.D. 173 West 83d Street
Assistant in Normal Histology

WINFIELD JOHNSON, Ph.G. 437 West 59th Street
Assistant in Chemistry

HENRY E. CRAMPTON, Jr., A.B. 437 West 59th Street
Assistant in Biology

PARKER C. MCILHINEY, Ph.B., A.M., Ph.D. ... 72 Monticello Ave., Jersey City
Assistant in Metallurgy

PEARCE BAILEY, M.D.....50 East 31st Street
Assistant in Pathology

EDWIN M. KITCHEL, M.D.....437 West 59th Street
Assistant in Normal Histology

HENRY J. BURCHELL, Jr., A.M.....38 East 53d Street
Assistant in Latin

MARSTON T. BOGERT, A.B., Ph.B.....Flushing, N. Y.
Assistant in Chemistry

WALTER W. COOK, A.B.....110 Madison Avenue, Flushing, N. Y.
Assistant in Mathematics (94-5)

JAMES F. BERRY, A.B.....215 West 44th Street
Assistant in Mathematics (94-5)

ARTHUR M. DAY, A.M.....East Side House, Foot East 76th Street
Assistant in Political Economy and Social Science

NORMAN WILDE, Ph.D.....Ludlow Street, Yonkers, N. Y.
Assistant in Philosophy

THOMAS H. HARRINGTON, C.E.....Westchester, N. Y.
Assistant in Drawing

ADOLPH BLACK, C.E.....Columbia College
Assistant in Civil Engineering

CHARLES T. PARKER, M.D.....46 East 34th Street
Assistant in Operative Surgery

CLARKE G. VOORHEES, A.M.....Columbia College
Honorary Assistant in Assaying

Curators

MAXIMILIAN K. KRESS.....Columbia College
Curator of the Architectural Collections

GILBERT VAN INGEN.....244 East 50th Street
Curator of the Geological Collections

Curator of the Herbarium

Lecturers

JOHN ORDRONAUX, LL.D., M.D.....58 William Street
Professor of Medical Jurisprudence

A. C. BERNHEIM, LL.B., Ph.D.....16 Broad Street
Lecturer on the Political History of the State and City of New York

FREDERIC A. BANCROFT, Ph.D.....Columbia College
Prize Lecturer on International Public Law

R. S. ROUNDS, A.B.....17 West 30th Street
Prize Lecturer in the Law School

FRANK MOORE COLBY, A.M.....117 West 58th Street
Lecturer in History

WILLIAM Z. RIPLEY, Ph.D.....Mass. Institute of Technology, Boston
Prize Lecturer

CHARLES T. TERRY, A.B., LL.B.....8 Vernon Place, Brooklyn, N. Y.
Lecturer on Procedure in Equity and under the Code

CHARLES P. WARREN, A.M.....59 West 49th Street
Lecturer in Architecture

MORTIMER L. EARLE, Ph. D.....462 West 22d Street
Lecturer in Greek (94–5)

WILLIAM C. LAWTON, A.B.....3737 Locust St., Philadelphia, Pa.
Lecturer in Greek (94–5)

HERMAN J. SCHMITZ, A.M.....5 Park Pl., Stamford, Conn.
Lecturer in the Germanic Languages and Literatures

GEORGE BENDELARI, A.M.....467A McDonough Street, Brooklyn, N. Y.
Lecturer in the Romance Languages and Literatures

GEORGE LOUIS BEER, A.M.....Columbia College
Prize Lecturer on European History

DAVID BANDLER, A.B., LL.B.....Columbia College
Prize Lecturer in the B. Law School

HENRY RUTGERS MARSHALL, A.B.....874 Broadway
Honorary Lecturer in Æsthetics

REV. ABRAHAM YOHANNAN.....136 East 48th Street
Honorary Lecturer in Oriental Languages

Clinical Instructors and Clinical Assistants at the Vanderbilt Clinic

MEDICINE

FRANK W. JACKSON, M.D.....12 West 18th Street
Chief of Clinic

GEORGE R. LOCKWOOD, M.D
WILLIAM K. DRAPER, M.D.
THOMAS S. SOUTHWORTH, M.D.
VAN HORNE NORRIE, M.D.

SURGERY

ELLSWORTH ELIOT, M.D.....48 West 36th Street
Chief of Clinic

CHARLES NORTH DOWD, M.D.
JOSEPH AUGUSTUS BLAKE, M.D.
LOUIS IRVING MASON, M.D.
PERCY RANNEY BOLTON, M.D.
WALTER BENSEL, M.D.
EDWARD M. FOOTE, M.D.

NEUROLOGY

FREDERICK PETERSON, M.D.....60 West 50th Street
Chief of Clinic

WILLIAM H. CASWELL, M.D.
MORTON R. PECK, M.D.
PEARCE BAILEY, M.D.
LOUIS F. BISHOP, M.D.
CHARLES E. ATWOOD, M.D.
LEWIS A. CONNOR, M.D.
A. W. FERRIS, M.D.
H. S. STEBBINS, M.D.
WILLIAM B. NOYES, M.D.

GYNECOLOGY

HERSEY G. LOCKE, M.D. 2 West 43d Street
Chief of Clinic

GEORGE W. JARMAN, M.D.
W. L. STONE, M.D.
J. B. WALKER, M.D.
GUSTAV W. BRATENAHL, M.D.
B. J STIEFEL, M.D.
E. H. L. MCGINNIS, M.D.

OPHTHALMOLOGY

CHARLES H. MAY, M.D. 692 Madison Avenue
Chief of Clinic

JOHN HERBERT CLAIBORNE, M.D.
WARD A. HOLDEN, M.D.
HENRY H. TYSON, M.D.
JACKSON M. MILLS, M.D.
EDWARD B. COBURN, M.D.

LARYNGOLOGY

D. BRYSON DELAVAN, M.D. 1 East 33d Street
Chief of Clinic

CHRISTOPHER J. COLLES, M.D.
GEORGE A. RICHARDS, M.D.
WILLIAM K. SIMPSON, M.D.
JAMES P. MCEVOY, M.D.
WILLIAM HALLOCK PARK, M.D.
EDWARD W. PERKINS, M.D.
J. D. ASPINWALL, M.D.
JOHN HASKELL BILLINGS, M.D.
RICHARD FROTHINGHAM, M.D.
ALFONSO A. RICHARDSON, M.D.
EDWARD A. SCOTT, M.D.

OTOLOGY

WILLIAM COWEN, M.D. 35 East 60th Street
Chief of Clinic

ROBERT LEWIS, M.D.
EDWARD A. KEILY, M.D.
A. G. TERRELL, M.D.

DERMATOLOGY

GEORGE T. JACKSON, M.D. 14 East 31st Street
Chief of Clinic

JOHN CABOT, M.D.
CHARLES C. RANSOM, M.D.
JOHN B. HUBER, M.D.
J. H. P. HODGSON, M.D.

DISEASES OF CHILDREN

FRANCIS HUBER, M.D. 113 East Broadway
Chief of Clinic

JOSEPH HUBER, M.D.
FRED. S. MACHALE, M.D.
LOUIS M. SILVER, M.D.
F. E. SONDERN, M.D.
F. BIERHOFF, M.D.

GENITO-URINARY AND VENEREAL DISEASES

JAMES R. HAYDEN, M.D.....107 West 55th Street
Chief of Clinic

ROBERT H. GREENE, M.D.
WILLIAM C. GILLEY, M.D.
EDMOND Y. HILL, M.D.
JOHN VAN DER POEL, M.D.
JOHN B. STEIN, M.D.
E. L. WILLIAMSON, M.D.
J. C. P. VAN LOAN, M.D.
W. B. BROUNER, M.D.
J. E. SHRADY, M.D.

Emeritus Officers

HENRY DRISLER, LL.D.....48 West 46th Street
Emeritus Professor of the Greek Language and Literature

REV. CORNELIUS R. DUFFIE, S.T.D.....263 Lexington Avenue
Chaplain Emeritus

THOMAS M. MARKOE, M.D.....7 West 15th Street
Emeritus Professor of Surgery

WILLIAM DETMOLD, M.D.....38 East 9th Street
Emeritus Professor of Clinical and Military Surgery

T. GAILLARD THOMAS, M.D.....600 Madison Avenue
Emeritus Professor of Obstetrics and Gynecology

JOHN T. METCALFE, M.D.....149 West 57th Street
Emeritus Professor of Clinical Medicine

EDWARD CURTIS, M.D.....120 Broadway
Emeritus Professor of Materia Medica and Therapeutics

FESSENDEN N. OTIS, M.D.....5 West 50th Street
Emeritus Professor of Genito-Urinary Diseases

JOHN D. QUACKENBOS, A.M., M.D.....331 West 28th Street
Emeritus Professor of Rhetoric

Other Officers

GEORGE R. VAN DE WATER, D.D.....54 East 49th Street
Chaplain 1894–5

GEORGE H. BAKER, A.M.....Columbia College
Librarian

CHARLES ALEXANDER NELSON, A.M.....Columbia College
Deputy Librarian

E. B. CRAGIN, M.D.....437 West 59th Street
Assistant Secretary of the Faculty of Medicine

Columbia College in the City of New York

GENERAL STATEMENT

COLUMBIA COLLEGE IN THE CITY OF NEW YORK is the legal designation of the institution founded in 1754 as King's College by the grant of a royal charter from George II. The title of the corporation, originally the Governors of the College of the Province of New York, is now the Trustees of Columbia College in the City of New York.

Columbia College is governed primarily by twenty-four trustees whose term of office is for life and who form a self-perpetuating body. The title to all the property of the College is vested in the trustees, who also appoint the president and all officers of instruction and administration. The trustees are the ultimate source of authority in all matters pertaining to the College.

The president has charge of the educational administration of the College, and is the chairman of the university council and of every faculty established by the trustees.

The university council is a body consisting of the president, the dean and secretary of the School of Arts, *ex-officio*, and the dean and one elected member from each of the university faculties. The university council, subject to the reserved power of control by the trustees, has charge of the general educational interests of the College and of all matters affecting more than one faculty.

Columbia College is now both a college and a university. The college is known as the School of Arts. It offers a course of four years' duration in the liberal arts and sciences, leading to the degree of Bachelor of Arts, which is conferred on the recommendation of the faculty of Arts.

The university consists of the following faculties: Law, Medicine, Mines (covering Architecture and Applied Science), Political Science, Philosophy, and Pure Science. These faculties have charge of all the graduate work, besides the professional instruction in law, medicine, and applied science. The faculties are administrative divisions of the teaching body made in accordance with the natural affiliations of the subjects taught. The schools under their charge form convenient groupings of students. Each school bears the name of its faculty, except that the school conducted by the medical faculty is known as the College of Physicians and Surgeons.

These divisions into faculties and schools neither control nor limit the student

in his freedom of selecting under one or several of the faculties courses that lead to the university degrees of Master of Arts and Doctor of Philosophy. The degree of Master of Laws is also a university degree, but for this degree the choice of the student is restricted to subjects under the two faculties of Law and Political Science. All of these degrees are granted on the recommendation of the university council.

The professional degrees are Bachelor of Laws, Doctor of Medicine, Bachelor of Science, Engineer of Mines, Civil Engineer, Metallurgical Engineer, Electrical Engineer, and Sanitary Engineer. These are conferred on the recommendation of the faculties of Law, Medicine, and Mines respectively.

The degrees of Doctor of Laws, Doctor of Sacred Theology, and Doctor of Letters are conferred *honoris causa* by the trustees at their discretion.

The library of the College contains more than 190,000 bound volumes, besides a very large number of pamphlets. More than 700 scientific and literary periodicals are regularly received by the College. The library is open fourteen hours a day for reference or for the withdrawal of books, without fee to students. About 20,000 volumes are accessible from the reading-room and may be freely consulted by readers without recourse to the librarian.

The city of New York is full of opportunities that may be availed of by advanced students. In particular, by special arrangements, peculiar privileges have been obtained for students of Columbia College, free from additional charge, in the Union Theological Seminary, the Metropolitan Museum of Art, the American Museum of Natural History, and the Teachers College.

The principal administrative officers of the College, other than the president, are, the deans of the several faculties, the librarian, and the superintendent of buildings and grounds.

In the following pages will be found a statement of the method of entering the College, the cost of tuition, the endowments for the benefit of students, and the special privileges open to them in affiliated institutions.

The scope of instruction given in Columbia College is indicated broadly by the statements of the departments of instruction, in connection with each of which are stated in detail the courses offered for the current academic year, together with a brief summary of the equipment of the department for the work it undertakes to do.

Following these details will be found the requirements for the university degrees, the organization of the several schools, together with the requirements for the various degrees under the control of separate schools, degrees conferred at the last Commencement, the list of Fellows, publications of the university, and the calendar for the academic year.

METHOD OF ENTERING THE COLLEGE

Candidates for a degree, after filling in the blank provided for the purpose, and obtaining the signature of the Dean of the proper Faculty thereto, should present the same to the Treasurer, with the proper fee. Students intending to pursue a partial course must have the amount of the tuition fee certified by the Dean of the proper Faculty, before the fee will be received.

Students entering the university for the first time are required to pay a matriculation fee of $5, and to matriculate in the President's office by writing their names in the matriculation book. Such students must personally present, as evidence of their right to matriculate, the Treasurer's receipt upon the form provided for all required fees.

Every student holding a scholarship, or receiving the benefit of free or reduced tuition, is required to file with the President's Secretary a certificate to that effect, from the Dean of the Faculty with which he is registered.

Immediately after matriculating, every student must present his card for registration to the Dean, or Deans, of the Faculty, or Faculties, under which he proposes to study.

No student is permitted to attend any academic exercise until he has complied with the regulations in regard to matriculation and registration.

Students entering the Medical School may pay their fees and register at the College of Physicians and Surgeons, 437 West 59th Street.

All communications for the President must be addressed to him at the College.

For circulars and detailed information, address the Secretary of the President, or the Registrar of the school concerned, Columbia College, except the Registrar of the College of Physicians and Surgeons, whose address is 437 West 59th Street.

FEES

The Statute in regard to fees is as follows:

§ 1. The following fees are established:

Matriculation Fees.

For Matriculation $ 5

Tuition Fees.

For Tuition:

For candidates for a degree,

In the School of Arts	per annum	150
In the School of Law	"	150
In the College of Physicians and Surgeons	"	200
In the School of Mines	"	200
In the School of Political Science	"	150
In the School of Philosophy	"	150
In the School of Pure Science	"	200
For candidates for the degree of Master of Arts and Doctor of Philosophy	"	150

The maximum fee for the degrees of A.M. and Ph.D. shall be respectively $150 and $300.

For students pursuing partial courses,
at the rate of $15 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of 150

For auditors,
at the rate of $20 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of 200

Examination Fees.

For Examinations :

For examinations at unusual times 5
For the Bachelor's degree (not professional or technical) . . 15
For any professional or technical degree 25
For the degree of Master of Arts 25
For the degree of Doctor of Philosophy 35

Special Fees :

Special Fees (Medicine).

In the College of Physicians and Surgeons,

Dissecting material, per "part" 1

For students who are not candidates for a degree :

At the rate for each course of didactic lectures in Anatomy; Physiology; Physics and Chemistry; Materia Medica, Therapeutics, and Hygiene; Obstetrics and the Diseases of Women; Surgery; the Practice of Medicine, including the diseases of the Mind and Nervous System 20
Dissection 10
Practical Chemistry, including chemicals and breakage, per course 25
Laboratory course in Normal Histology, including materials . 25
Laboratory course in Pathology and Pathological History, including materials 25
Laboratory fee for special instruction in Pathology or Histology or Bacteriology, per month 25
Operative Surgery on the cadaver, including material, per course 20

For other special courses the fees must be specially arranged for with the instructors.

The clinical lectures at the Vanderbilt Clinic are free to matriculates who do not take the regular curriculum.

The public clinical lectures, and demonstrations of Pathological Anatomy, which are given at the hospitals by officers of the College, are free to all matriculates.

Special Fees (Mines).

In the School of Mines,

For graduate students :

For the use of the cabinets only 25
For the use of the drawing academy only 25
For the use of the laboratories or either of them 50
For candidates for admission to advanced standing who attend the Summer School in Surveying 35

The President and Treasurer are authorized to determine the fees to be paid in special cases, for partial attendance, upon the basis of the fees hereinbefore specified.

Payment of Fees.

§ 2. The matriculation fee shall be paid before the entrance examination. Examination fees shall be paid in all cases before examination.

§ 3. Annual tuition fees may be paid in equal installments at the beginning of each session of the academic year, except that in the case of students in the College of Physicians and Surgeons such fees shall be paid in full at the beginning of the academic year, and except that whenever the total amount of a student's tuition fees shall not exceed one hundred dollars, the full amount shall be paid at the beginning of the academic year or at entrance.

Prepayment of Dues.

§ 4. No candidate for a degree in any School shall be entitled to receive the same until he shall have discharged all his dues to the College.

Free and Reduced Tuition

§ 5. Free or reduced tuition may be granted by any Faculty, except the Faculty of Medicine, in special cases on the ground of character, ability, and need combined, but no reduced fee shall be less than fifty per cent. of the statutory charge, and the total number of students receiving free or reduced tuition under any Faculty shall not exceed ten per cent. of the total number of students registered with such Faculty. No free or reduced tuition shall be granted to any student during the first year of his connection with the College, except in the case of students matriculating for the first time in the year 1892.

Fellows. Free Students.

§ 6. Fellows shall be exempt from the payment of all fees.

§ 7. Free students and students granted a reduction of tuition fees shall not be exempt from the payment of fees for matriculation, for extra examination, and for examination for a degree.

Comparative Statement of Students' Expenses for the Academic Year, October to June

BASED ON STUDENTS' STATEMENTS

	Low	Average	Liberal
Matriculation Fee (First Year)	5	5	5
Tuition	150	150	150
Books	15	30	40 up
College Incidentals	—	15	50 "
Room (32 weeks)	80	128	224 "
Board (32 weeks)	80	128	256 "
Clothes and Washing	35	75	125 "
All other Expenses	15	25	50 "
Total	380	556	900 up

In the case of students in the schools of Medicine, Mines, and Pure Science, $50.00 for tuition should be added, the fee in those schools being $200.

Committee on Aid for Students

The University Council has constituted a Standing Committee on Aid for Students, consisting at present of the following members :

Professor E. R. A. SELIGMAN (Faculty of Political Science), Chairman.
" F. M. BURDICK (Faculty of Law).
" G. S. HUNTINGTON (Faculty of Medicine).
" F. R. HUTTON (Faculty of Mines).
" J. F. KEMP (Faculty of Pure Science).
" H. A. TODD (Faculties of Arts and Philosophy).

It is the design of the Committee to put students desiring to work their way through college, especially those coming from elsewhere than New York or the immediate vicinity, in the way of earning enough for their partial or complete support, or if possible to extend assistance to them in other ways, while they are pursuing their studies here. It is believed that many opportunities may be offered to students of this class if the fact of their desire to obtain employment is made known. Some of the openings likely to be available are : private tutoring, translating, copying of various sorts, teaching in evening schools. All communications should be addressed to the Committee.

FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS

University Fellowships.

From and after July 1, 1892, there shall be eighteen Fellowships ; and from and after July 1, 1893, twenty-four Fellowships to be known as " University Fellowships," each of the value of five hundred dollars a year. Such Fellowships shall be awarded by the Council, to those applicants who give evidence of special fitness to pursue courses of higher study and original investigation, the competition to be open to graduates of all colleges and scientific schools. Vacancies occurring in any of such Fellowships shall be filled in the same manner in which original appointments are made.

University Fellowship Regulations.

The application shall be made prior to March 1st, in writing, addressed to the President of Columbia College. Applications received later than March 1st may fail of consideration. The term of the Fellowship is one year, dating from July 1st. Residence should begin October 1st.

The candidate must give evidence

(*a*) of a liberal education, such as a diploma already granted, or about to be received, from a college or scientific school of good repute ;

(*b*) of decided fitness for a special line of study, such as an example of some scientific or literary work already performed ;

(*c*) of upright character, such as a testimonial from some instructor.

The value of each Fellowship is five hundred dollars. Payments will be based on the time during which the Fellow shall have been in residence. The holder of a Fellowship is exempt from the charges for tuition.

Every holder of a Fellowship will be expected to perform such duties as may be allotted to him in connection with his course of study, which course shall be

such as to lead to the degree of Doctor of Philosophy. He will be expected to devote his time to the prosecution of special studies under the direction of the head of the department to which he belongs, and before the close of the academic year to give evidence of progress by the preparation of a thesis, the completion of a research, the delivery of a lecture, or by some other method. He must reside in New York or vicinity during the academic year.

No holder of a Fellowship shall be permitted to pursue a professional or technical course of study during his term. With the written approval of the President, but not otherwise, he may give instruction or assistance in any department of the university.

A Fellow may be reappointed at the end of a year for reasons of weight. No Fellow may be reappointed for more than two terms of one year each.

As these Fellowships are awarded as honors, those who are disposed, for the benefit of others or for any other reason, to waive the pecuniary emoluments may do so, and still have their names retained on the list of Fellows.

School of Arts

Alumni Scholarships.

The Alumni Association of Columbia College shall be entitled to have always, in the School of Arts, four students to be instructed free of charge.

Religion and Learning Scholarships.

The Society for Promoting Religion and Learning in the State of New York shall be entitled to have always in the School of Arts, two students in each class, to be instructed free of charge.

Faculty Scholarships.

The members of the several Faculties shall be entitled to have their son educated in the School of Arts free of charge.

Alumni Competitive Scholarship.

There shall be offered annually, as a prize to the student passing the best entrance examination in the School of Arts, a free scholarship for the course of four years. Such scholarship shall be known as the "Alumni Competitive Scholarship," and the Faculty shall have power to fix the conditions under which such scholarship shall be awarded.

Moffat Scholarships.

The personal representatives of the late William B. Moffat, M.D., and their assigns shall be entitled to nominate and have always two students in the School of Arts, to be instructed free of charge; and such scholarships shall be known as the "Moffat Scholarships."

Schermerhorn Scholarships.

The nearest living male relative of the late John Jones Schermerhorn shall be entitled to nominate and have always five students in the School of Arts to be instructed free of charge; and such scholarships shall be known as the "Schermerhorn Scholarships."

Theological Seminary Scholarship.

The scholarship in the General Theological Seminary of the Protestant Episcopal Church (heretofore placed at the disposal of the Trustees of Columbia College by the Society for Promoting Religion and Learning in the State of New York) shall be awarded upon the following conditions, to wit:

a. All candidates shall comply with the requirements for admission of the General Theological Seminary, and as candidates for the ministry of the Protestant Episcopal Church, and must have taken the degree of Bachelor of Arts and have been graduated with honors.

b. All candidates shall report themselves to the Education Committee of such Society at least three months previous to the examination to be held by the Faculty for the purpose of awarding such scholarship.

Prize of the Alumni Association.

A prize of fifty dollars in money or its equivalent, at the option of the receiver, established by the Association of the Alumni of Columbia College, was first awarded at the commencement in June, 1858.

It is to be given "to the most faithful and deserving student of the graduating class."

Three names are selected by the Faculty and submitted to the class, who from these three designate one to receive the prize. Should the class at any time fail to make the selection, and give notice thereof to the President of the College at least ten days prior to the day appointed for commencement, the selection of the student to receive the prize may be made by the Faculty.

McVickar Prizes.

Two Annual Seminary Prizes were founded in November, 1851, by the Rev. Dr. John McVickar, through the Society for Promoting Religion and Learning, and for which an endowment of $1000 is provided on the following conditions:

1. The first, to be entitled The Society's Greek Seminary Prize of Thirty Dollars, to be annually competed for among such members of the graduating class as shall have given in their names to the President, at least one month previous to such competition, as candidates for the General Theological Seminary of the Protestant Episcopal Church, each student giving in his name as competitor to designate the prize for which he contends, and to be confined to the choice then made. The examination for such prize to be held publicly in the chapel, and separate from the general examination. To be on:

a. The Epistles of the New Testament (in Greek) "ad aperturam libri."

b. On some one of the early Greek Fathers, to be designated at the time of noticing the prize, or, if none be designated, then upon some portion of Chrysostom or Athanasius, at the choice of the student.

The decision to be with the President and the Professor of Greek.

2. The second, to be entitled The Society's English Seminary Prize of Twenty Dollars, to be annually competed for as before, and to consist in the production of an essay (to be publicly read or not, as the President may determine), of the ordinary length of a pulpit discourse, on some subject connected with the course of evidences on which the class has been engaged; such subject to be selected by the professor of the evidences, and given out by him at the time of notice; and the prize to be adjudged as before, by the President and the professor of that branch; such decision to have respect to—

a. The general ability and soundness of the essay;

b. Its logical and demonstrative form; and

c. The pure Saxon style and idiom in which it is written.

The names of the successful candidates to be enrolled in a suitable book to be provided for that purpose, lettered appropriately, and kept on the library table; to be announced with other honors on commencement day, and also recorded honorably in the Society's books.

Chanler Historical Prize.

In 1887, Mr. J. Winthrop Chanler, an alumnus of the college of the class of 1847, bequeathed "to the Trustees of Columbia College in the City of New York, the sum of one thousand dollars, to be invested and kept invested, and the income thereof to be given annually, on the commencement day, to the undergraduate member of the senior class of said college who shall be the author of the best original manuscript essay in English prose on the history of

civil government of America, or some other historical subject, the same to be determined by the judgment and decision of the Faculty of said college." The bequest became available in 1879.

The subject for the prize will be announced on or before November 1 of each year, and the competitive essays must be handed to the President on or before May 1 of the year following.

School of Law

Money Prizes.

Three prizes of two hundred and fifty dollars ($250), one hundred and fifty ($150), and one hundred dollars ($100), respectively, are awarded to members of the graduating class, at the close of each academic year, for the best essays upon one or more legal topics. The competition for such prizes is open only to students who have pursued the whole course of study required for the degree of Bachelor of Laws, and who shall be certified by the Faculty to have been diligent in attendance and to have maintained a high degree of scholarship throughout.

Toppan Prize.

Prizes to the amount of one hundred and fifty dollars ($150), founded by Robert N. Toppan, Esq., are awarded in Constitutional Law. A regular attendance upon the Law School for the first two years is a pre-requisite to competition.

College of Physicians and Surgeons

Fellowships of the Alumni Association.

In June, 1891, the Trustees, at the request of the Alumni Association of the College of Physicians and Surgeons, established three fellowships to be known as the Fellowships of the Alumni Association of the College of Physicians and Surgeons, the provision for which is made annually by the Association.

These fellowships are open to graduates of the College of Physicians and Surgeons who have shown special aptitude for scientific research in the departments of anatomy, physiology, or pathology. They are held for a period of two years and have an annual value of five hundred dollars each. The appointments to these fellowships are made by the executive committee of the Alumni Association from candidates presented to them by the professor of anatomy, the professor of physiology, and the professor of pathology.

The persons appointed to these fellowships are expected to devote themselves to scientific research in the department which they may elect, in this country, either in the schools of Columbia College, where they enjoy free tuition and the privileges of the laboratories, or in other institutions at their own expense. At the end of two years the holders of these fellowships are expected to present to the Association a thesis containing evidence of independent or original work in their special department. The next appointments to these fellowships will be made in May, 1896.

Alonzo Clark Scholarship.

By the will of the late Alonzo Clark, M.D., LL.D., for many years president of the College of Physicians and Surgeons, and professor of pathology and practical medicine, it has been placed in the power of the Medical Faculty to bestow a scholarship, with an income of about nine hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science.

Harsen Prizes for Clinical Reports.

Three annual prizes, founded in 1859, by the late Jacob Harsen, M.D., a graduate of the College of Physicians and Surgeons, are offered for the three best reports, in writing, by students of the Medical Department, of the clinical

instruction given at the New York Hospital during any four consecutive months of the year which ends on commencement day.

These reports must embrace the clinical teaching of both the visiting physician and the visiting surgeon on duty.

The prizes are as follows :

A First Prize of one hundred and fifty dollars ; a Second Prize of seventy-five dollars ; a Third Prize of twenty-five dollars.

A " Harsen Prize Medal " and a diploma are given with each prize.

Harsen Prizes for Proficiency at Examination.

In consequence of the great increase in value of the Harsen Prize Fund, in addition to the three prizes above mentioned, there are awarded three Harsen prizes for proficiency at examination, viz. :

A First Prize of five hundred dollars ; a Second Prize of three hundred dollars ; a Third Prize of two hundred dollars.

The award of these prizes is made as follows :

The ten members of each graduating class who, at their examination for the degree of Doctor in Medicine, have shown the highest proficiency in all the branches combined, receive each a diploma of " Examination Honors," and are entitled to take part in special competitive examinations, the three most meritorious competitors at which receive the first, second, and third prizes, respectively.

The competitive examinations consist :

I. Of an examination in writing, covering *all the branches* of medical teaching.

II. Of an examination upon the cadaver in *practical anatomy*, conducted by the professor of anatomy.

III. Of practical examinations in *clinical medicine* and *clinical surgery*, conducted at the hospitals by the professors of medicine and surgery, respectively.

The relative merits of the competitors are decided, and the award of the prizes made, by a committee of three judges, consisting of the dean of the College of Physicians and Surgeons, the president of the Association of the Alumni of the same, and a resident alumnus selected by them.

Alumni Association Prize.

The Alumni Association Prize is a biennial prize of five hundred dollars open for competition to the alumni of the College of Physicians and Surgeons. It is awarded for the best medical essay submitted upon any subject the writer may select, and is open to competition in alternate years with the Cartwright Prize.

If no one of the competing essays be deemed sufficiently meritorious, the prize is not awarded.

An essay in order to be held worthy of the prize, must contain the result of original investigations made by the writer.

This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize. Each competitor is required to send with his essay to the Prize Committee a statement that these requirements have been complied with.

Essays in competition for the prize to be awarded at commencement, 1896, must be sent to the secretary of the Alumni Association of the College of Physicians and Surgeons on or before April 1, 1896.

Competing essays must each be marked with a device or motto, and accompanied by a sealed envelope, similarly marked, containing the name and address of the author.

Cartwright Prize of the Alumni Association.

The Cartwright Prize consists of *five hundred dollars*, and is offered for competition in alternate years with the Alumni Association prize.

It is awarded on the same terms as the latter, *except that it is open to universal competition.*

Stevens Triennial Prize.

The Stevens Triennial Prize was established by the late Alexander Hodgdon Stevens, M.D., formerly president of the Medical School, on the following plan:

The prize, awarded triennally, consists of the interest yielded by the principal fund during three years, and amounts to *two hundred dollars.*

The administration of the prize is entrusted to a commission, consisting of the dean of the Medical Faculty (*ex-officio*), the president of the Alumni Association of the College of Physicians and Surgeons (*ex-officio*), and the professor of physiology (*ex-officio*) in the same institution.

The prize is awarded to no essay unless it is sufficiently meritorious and includes the results of original research by the writer upon the subject chosen.

In 1897 this prize will be given to the *best medical essays* submitted, upon any subject the writer may select.

The competing essays must be sent in to the dean of the College of Physicians and Surgeons, New York, on or before the first day of January, 1897. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope, bearing the same device or motto, and containing the name and address of the author. The envelope belonging to the successful essay will be opened, and the name of the author announced, at the annual commencement of the College in 1897; at which time, also, the subjects for the next triennial prize (1900) will be announced.

The prize is open for universal competition.

Joseph Mather Smith Prize.

The fund for the Joseph Mather Smith Prize was given by the relatives, friends, and pupils of the late Dr. Smith, as a memorial of his services as professor in the College of Physicians and Surgeons from 1826 to 1866. Under the provisions of the trust, an annual prize of *one hundred dollars* is awarded for the best essay (if sufficiently meritorious) on the subject of the year, presented by an alumnus of the College of Physicians and Surgeons. The prize committee, consisting of the dean of the Medical Faculty, the professor of the practice of medicine, and the president of the Alumni Association of the College of Physicians and Surgeons, designate each year the subject for the following year. The competing essays should be sent to the dean of the Medical Faculty on or before March 10th, each essay signed with a device or motto, and accompanied by a sealed envelope, inscribed with the same device or motto, and containing the name of the author. The envelope of the successful essayist will be opened, and the prize awarded at the annual commencement next following.

An essay in competition for the prize to be awarded in 1895 may be upon any subject relating to hygiene, pathology, or practical medicine.

School of Mines

Tyndall Fellowship.

There shall be a Fellowship to be known as the "John Tyndall Fellowship for the Encouragement of Research in Physics," which shall be held by some suitable person, who shall either be a graduate of or a student in the College, but not necessarily a candidate for a degree. Such Fellow shall be appointed by the Council upon the recommendation of the head of the Department of Physics. Such appointment shall always be for the term of one year only, but the Fellow, for the time being, shall be eligible for appointment from year to year, upon like recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid in four quarterly installments on the usual quarter days, upon the certificate of the President; and the Trustees guarantee that such net income will amount to at least six hundred and forty-eight dollars a year, being six per cent. upon ten thousand eight hundred dollars, the fund presented to the College by Professor Tyndall.

Barnard Fellowship.

There shall be a Fellowship to be known as the "Barnard Fellowship for Encouraging Scientific Research," which shall he held by a graduate of the School of Arts or School of Mines who has evinced decided aptness for physical investigation and who may be disposed to devote himself to such investigation for some years continuously. Such Fellow shall be appointed by the Council upon the joint recommendation of the Faculties of the Schools of Arts and Mines. Such appointment shall be for the term of one year only, but the Fellow, for the time being, shall be eligible to reappointment from year to year upon like joint recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid to him in four equal quarterly installments on the usual quarter days, upon the certificate of the President.

Duties of Tyndall and Barnard Fellows.

It shall be the duty of a Barnard or John Tyndall Fellow to devote himself faithfully to the investigation of some subject in physical science at this College, or at some other in this country or abroad, under the supervision of some known physicist approved by the President and the head of the Department of Physics. He shall make a report quarterly to the President, giving an account of the work in which he has been engaged during the three months preceding; which report shall be certified by the physicist superintending and directing him. In case of failure faithfully to fulfil the obligations imposed upon him, such Fellow shall forfeit all privileges and emoluments conferred upon him by his appointment to the Fellowship, and the Council may at any time declare the Fellowship to be vacant.

Columbia Fellowship.

There shall be a Fellowship to be known as the "Columbia Fellowship in Architecture," which shall be open to all graduates of the Department of Architecture less than thirty years of age, and shall be awarded under such rules and regulations as shall from time to time be determined by the President and the Professor of Architecture. Holders of such Fellowship shall devote the income thereof to foreign study and travel in accordance with plans prepared by themselves and approved by the President and such Professors, and shall upon return present a written report and exhibit drawings in the Depart-

ment of Architecture. Said Fellowship shall be awarded in the spring of every even-numbered year, and payments thereof shall be made by the Treasurer on the certificate of the Professor of Architecture, endorsed by the President, in four equal installments of three hundred and twenty-five dollars each on the usual quarter days.

McKim Fellowships.

There shall be two Fellowships to be known as the "McKim Fellowships in Architecture," which shall be awarded upon like conditions and for like purposes as are specified in the foregoing section, but such Fellowships shall be awarded in the spring of every uneven-numbered year, and payments thereof shall be made by the Treasurer, on the certificate of the Professor of Architecture, endorsed by the President, in four equal installments of two hundred and fifty dollars each on the usual quarter days.

School of Political Science

Seligman Fellowships.

There shall be four Fellowships to be known as the "Seligman Fellowships," each of the value of two hundred and fifty dollars a year. Such Fellows shall be appointed by the Council upon the recommendation of the Faculty of Political Science. One or more additional Fellows may be appointed upon the same conditions, where there is a sufficient unexpended balance of the fund, provided by Mr. Jesse Seligman for the endowment of such Fellowships, to provide for such additional appointments. The sum due each of such Fellows shall be paid upon the certificate of the President that he has received in printed form and accepted a thesis for the degree of Doctor of Philosophy.

Prize in Political Economy.

An annual prize of one hundred and fifty dollars for the best essay on some subject in political economy has been established by Mr. Edwin R. A. Seligman, of the class of 1879. Competition for the prize is open to all members of the School of Political Science. The topic selected must be approved by the Faculty, and the essay itself must not be less than twenty thousand words in length.

Prize Lectureships.

The Trustees have established in the School of Political Science three prize lectureships of the annual value of five hundred dollars each, tenable for three years. The power of appointment is vested in the Faculty. One of these three lectureships becomes vacant at the close of each academic year. The previous holder may be reappointed. The conditions of competition are as follows:

1 The candidate must be a graduate of Columbia College in the School of Political Science or the School of Law. In the latter case he must have pursued the curriculum of the School of Political Science for at least two years.

2 He must be an active member of the Academy of Political Science.

3 He must have read at least one paper before the Academy of Political Science during the year next preceding the appointment.

The duty of the lecturer is to deliver annually, before the students of political science, a series of at least twenty lectures, the result of original investigation.

School of Philosophy

Drisler Fellowship.

In commemoration of the semi-centennial in the service of the College of Henry Drisler, LL.D., of the Class of 1839, who has held in this College the

chairs of both Latin and Greek, there shall be a Fellowship in Classical Philology of the value of five hundred dollars a year, to be known as the "Henry Drisler Fellowship in Classical Philology."

FELLOWSHIP REGULATIONS

No Fellow shall be allowed to accept remunerative employment except by permission of the President, and the acceptance of any such employment, without such permission, shall operate to vacate the Fellowship.

All Fellows, except as hereinbefore provided, shall be required to pursue their studies during the term of their Fellowship at the College, unless permission be granted them by the President to study elsewhere.

All Fellows shall be governed by such rules and regulations, not inconsistent with the Statutes, as may be prescribed by the Council.

BARNARD MEDAL

A gold medal, to be known as the "Barnard Medal for Meritorious Service to Science," shall be awarded at Commencement at the close of every quinquennial period dating from the 17th day of July, 1889, to such person, if any, whether a citizen of the United States or of any other country, as shall within the five years next preceding have made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as in the judgment of the National Academy of Sciences of the United States shall be esteemed most worthy of such honor.

LOUBAT PRIZE

Mr. Joseph F. Loubat has established, at Columbia College, two prizes, a first prize of $1000, and a second of $400, for the best works published in the English language upon the history, geography, archæology, ethnology, philology or numismatics of North America. The competition for these prizes is open, under the deed of gift, to all persons, whether connected with Columbia College or not, and whether citizens of the United States or of any other country. No works will be considered save such as rest upon original research and constitute a distinct contribution to science. In order to ensure consideration of their works, authors are invited to send copies to the President of Columbia College, not later than June 1st of the year in which the prize is to be awarded; but the competition will not be restricted to works thus submitted. Copies of the regulations adopted by the Trustees can be obtained from the President's Secretary.

Mr. Loubat has provided a permanent endowment for these prizes, which will make it possible to award them at least every five years. Beginning with the competition of 1898, it has been decided to divide the above list of subjects into two groups, in which the award will be made alternately. These groups will consist, respectively, of history, geography, and numismatics; and of archæology, ethnology and philology. It has also been decided that, after the present year, Mr. Loubat's foundation shall be employed to stimulate research and not simply to reward the authors of meritorious works published without reference to these prizes. Early in 1895 the group of subjects selected for the competition

of 1898 will be made known, and a number of topics will be announced to which the competition will be primarily restricted. That is, the College will call for the investigation of certain questions and the publication of the results, and the best works produced in answer to this call, if of sufficient value, will receive the prizes. But if no works upon the topics suggested seem worthy of an award, the prizes will be adjudged to the best works falling within the general group of subjects designated for the period.

It is hoped that Mr. Loubat's generous foundation may serve to encourage American research in a field that is peculiarly our own, but in which much of the best work has hitherto been done by strangers.

PRIVILEGES OPEN TO COLUMBIA STUDENTS IN OTHER INSTITUTIONS

American Museum of Natural History.

The American Museum of Natural History places its collections at the service of advanced students of Columbia College for the purposes of study and research and provides them with the necessary facilities for work.

Metropolitan Museum.

The Metropolitan Museum of Art admits students of Columbia College to the Museum on presentation of their matriculation cards, and gives them permission to draw, sketch, or copy objects in the Museum ; the curator of the department in which the student desires to work furnishing him with cards for the work.

Objects may be removed temporarily from exhibition for the purpose of special study, and students are allowed to study these objects in rooms specified for the purpose.

Union Theological Seminary.

The Union Theological Seminary admits, without fee, such students of high standing in the senior year and graduate department of Columbia College, as may be recommended by the President, to such lectures in the regular courses of the Seminary as may be agreed upon by the Faculty of the Seminary and the President of Columbia College, and, also, any students of high standing in the graduate department of Columbia College, recommended by the President, to any optional or special classes, subject to the approval of the Faculty of the Seminary.

The privileges of the library of the Seminary, for reference, are open to all students of Columbia College, on recommendation of the President. Reciprocal advantages are offered by Columbia to students of the Seminary.

Teachers College.

The courses of instruction and the library of the Teachers College, subject to the regulations of the institution, are open, without fee, to all matriculated students of Columbia College.

BARNARD COLLEGE

Barnard College, incorporated in 1889 by the Regents of the University of the State of New York, is a college for women, in close affiliation with Columbia College. It is an independent corporation. At Barnard College the curriculum is the same as at Columbia College, and Columbia makes itself responsible for its standards by conducting all the examinations. These are identical, so far as possible, with those of Columbia. The instruction at Barnard is given for the most part by Columbia instructors, and, when this is impossible, by

persons appointed with the approval of the President of Columbia College. Degrees are given to the graduates of Barnard College by Columbia College. Through Barnard College, women, properly qualified, can obtain the Columbia degrees of A.B., A.M. and Ph.D. In the three lower years of the course the instruction is entirely separate. In the senior and graduate years certain courses at Columbia are open to the students of Barnard.

For all information concerning Barnard College, address the Registrar of Barnard College, 343 Madison Avenue.

PUBLIC WORSHIP

Prayers are read in the College Chapel every week-day morning, except Saturday, at 9.10 o'clock, with the reading of the Scriptures and singing, and an address by the chaplain, and all the officers and students of the College are invited to be present.

THE LIBRARY

The library occupies the entire library building with the exception of the rooms devoted to the law school and the herbarium. It is open daily from 8.30 A.M. until 11 P.M. during term time, and until 10 P.M. in vacations. All officers, students, and graduates of all departments of the university have free access to the library and may draw books for home use. Undergraduates and *alumni* may draw books not exceeding three volumes in number for a period not exceeding two weeks, but may, if necessary, renew their loans.

Persons not connected with the college, who have occasion to use a library for purposes of study, and who are introduced to the librarian as responsible, are welcome to use the library in the building.

The reading-rooms contain table space for two hundred and fifty readers, and are lighted by electric light. The west end of the main reading-room is devoted to the law students, and is surrounded by an ample collection of standard text-books, digests, statutes and reports.

A large body of dictionaries, cyclopœdias and other reference books are placed in the general reading-room for common use. Students are allowed free access to a considerable part of the books in the library.

The library is carefully and accurately catalogued, both by authors and subjects. The catalogue is on cards accessible to the public. Competent reference librarians are on duty at all hours during which the library is open to render any needed assistance to readers.

The library contains about 170,000 volumes, exclusive of pamphlets and duplicates. Besides these, the library of the New York Academy of Sciences, consisting of about 8000 volumes, made up largely of the transactions of learned societies, is deposited here and accessible to all readers.

The additions to the library for the past four years have averaged about 17,000 volumes annually. The library is well represented in all the subjects taught in the various courses of the university.

It is the object of the library to furnish for students and investigators standard works in all sciences, and also, as far as may be needed, the material for original research.

The library contains a number of interesting and notable special collections. Among these may be mentioned the Phœnix library, the gift of Stephen Whitney Phœnix of the class of 1859, consisting of 7000 volumes ; the Avery Architectural library, with 11,000 volumes devoted to architecture and the building and industrial arts ; the Mary Queen of Scots library, collected and given by General J. Watts de Peyster, containing 300 volumes ; and the collection of books by and about Goethe, containing 800 volumes.

DEPARTMENTS OF INSTRUCTION

The number of hours, unless otherwise specified, indicates the number of hours a week for the entire year.

Anatomy

GEORGE SUMNER HUNTINGTON, M.D.....*Professor*
BERN BUDD GALLAUDET, M.D.....*Demonstrator*
ELLSWORTH ELIOT, Jr., M.D.....*Assistant Demonstrator*
LUCIUS WALES HOTCHKISS, M.D.....*Assistant Demonstrator*
GEORGE EMERSON BREWER, M.D.....*Assistant Demonstrator*
FREDERICK JOHN BROCKWAY, M.D., *Assistant Demonstrator and Alumni Association Fellow in Anatomy*
JOSEPH A. BLAKE, M.D.....*Assistant Demonstrator*
ROBERT ALFRED SANDS, M.D.....*Assistant Demonstrator*

Courses

I (A)—GENERAL INTRODUCTION TO VERTEBRATE MORPHOLOGY—Development of vertebrate type—Anatomy of the locomotory apparatus, osteology, syndesmology, and myology—Peripheral vascular and nervous systems—Regional anatomy of the head and neck.

I (B)—GENERAL INTRODUCTION TO VERTEBRATE MORPHOLOGY—Anatomy of the body cavities—Visceral and topographical course—Thorax and abdomen.

I (A) and I (B) are given in alternate years. Course "A" is given in 1894–'95.

3 hours. Professor HUNTINGTON

Required, in the second year, of candidates for the degree of M.D. Elective, in conjunction with II and IV, for seniors in the School of Arts.

II—DEMONSTRATIONS TO SECTIONS OF THE CLASS—4 hours, by the assistant demonstrators, arranged as follows :

(a) Osteology, syndesmology, myology, angeiology, and neurology of the upper and lower extremities. 2 hours. Dr. BROCKWAY

(b) Cranial osteology and syndesmology ; myology, angeiology, and neurology of head and neck. 1 hour. Dr. SANDS

(c) Preliminary visceral and topographical course. 1 hour. Dr. BREWER

Required, in the first year, of candidates for the degree of M.D. Elective, in conjunction with I and IV, for seniors in the School of Arts.

III—Demonstrations to Sections of the Class—Anatomy of the mouth, pharynx, and larynx—The auditory apparatus—The central nervous system. 1 hour. Dr. Gallaudet

Required, in the second year, of candidates for the degree of M.D.

IV—Laboratory Course—Dissection of the human body. 18 to 20 hours for from thirteen to twenty-one weeks. Professor Huntington, Dr. Gallaudet, and staff of Assistant Demonstrators.

Required, in the first year, of candidates for the degree of M.D. Elective, in conjunction with I and II, for seniors in the School of Arts.

V—Laboratory Course—Dissection of the human body. 10 to 12 hours for from six to eleven weeks. Professor Huntington, Dr. Gallaudet, and staff of Assistant Demonstrators.

Required, in the second year, of candidates for the degree of M.D.

VI—Laboratory Courses in Animal Morphology—No specified number of hours. Professor Huntington

Optional, for qualified candidates for the degree of M.D. Open to candidates for the degree of A.M. or of Ph.D. whose major or minor subject is Anatomy.

VII—The Laboratory of Animal Morphology is open for research, under the direction of the professor, to advanced workers. No definite number of hours. Professor Huntington

Fellowships

For the University and Alumni Association Fellowships, open to persons desiring to do special work under the Professor of Anatomy, see pages 18 and 21.

Equipment

The laboratory facilities of the Department of Anatomy are very complete. The large general dissecting room accommodates from 220 to 294 students at a time, working in groups of five or seven, respectively, at one table.

The recently completed erection of a plant for the production of artificial cold by the anhydrous ammonia process has enabled the department, through the means offered for the indefinite preservation of fresh subjects by the cold storage system, greatly to increase the amount of material available for laboratory work; and has also rendered it possible so to regulate the temperature of the general laboratory, that the work can be carried on without difficulty during the warmer months at the beginning and close of the academic year.

The recently completed laboratory for advanced morphological research is equipped with apparatus, and provided with steam power and plant, electricity, and ammonia freezing and corrosion plants.

Every facility for advanced and research work in morphology is here extended. The established connections of the department furnish abundant human and comparative material, both mature and embryonal. During the eight months since the completion of the laboratory advanced work has been done by three graduates, and four students, in medicine. The private library of the Professor of Anatomy is at the disposal of such workers.

Much work has been done in the formation of a Museum of Human and Comparative Anatomy, the ultimate design of which is to present, in as complete a

manner as possible, a view of the evolution of the forms of animal life, and of their natural relations, both in series of natural groups, and in the comparative and relative position of organs and systems. Even the approximate attainment of this aim will require much time and work. For the present, the energies of the department are directed toward placing in position the very abundant vertebrate material already on hand, and the collection of models and casts pertaining chiefly to human anatomy. It is hoped that sufficient progress in these directions will be made before long to justify the opening of the museum. The collection, both as regards groups and the individual preparations, is designed for the illustration of both elementary and advanced courses.

In addition to the museum collection proper, the department is constantly adding to a large collection for advanced study and research.

A study collection of human osteological preparations is so administered as to enable every student to take out the different osteological series and retain them for private study as long as required.

Architecture

WILLIAM R. WARE, B.S. *Professor*
ALFRED D. F. HAMLIN, A.M. *Adjunct Professor*
FRANK DEMPSTER SHERMAN, PH.B. *Adjunct Professor*
GRENVILLE TEMPLE SNELLING, B.S. *Instructor*
MAXIMILIAN K. KRESS *Curator of the Architectural Collections*
CHARLES A. HARRIMAN *Instructor*
CHARLES P. WARREN, A.M. *Lecturer*

General Statement

The first three years are given to parallel courses in Drawing and Design, in History and Ornament, and in Mathematics, Architectural Engineering, and Professional Practice, with exercises in the reading of French and German text-books and the writing of English. In the first and second years are lectures in Physics and Chemistry and in the second and third on the Theory of Architecture and on the Decorative Arts. Many of these subjects are given in alternate years, two classes taking them together. In the fourth year the students have the choice of an advanced course in History and Design, or of an advanced course in Scientific Construction and Practice. These are identical with the university courses in these subjects, so that a student who selects one of these courses as an undergraduate may return and take the other as a university student. Special students, not candidates for a degree, are received into these courses if qualified to pursue them.

In alternate years are awarded a Travelling Fellowship of the value of $1300, established by the Trustees in recognition of the liberality to this department of Mr. F. A. Schermerhorn, or two such fellowships, of the value of $1000 each, the gift of Mr. C. F. McKim. Courses I, II, IV, V, VIII, IX, X, XIII, and XV are open as electives to seniors in the School of Arts.

Courses

I—Ancient Architectural History—2 hours, first year. Text-book: Reber's History of Ancient Art. Mr. Kress

II—Mediæval Architectural History — Byzantine, Romanesque, Gothic. 2 hours a week, first term, with reading of a French text-book by the second-year men and of a German text-book by the third-year men. 2 hours reports and criticisms, and 12 hours original research in library and drawing-room, second term. Exercises in historical design. See XV. Text-books: Corroyer, L'Architecture Gothique, and Redtenbacher, Mittelalterliche Bankunst. Every other year to second and third year classes together (alternating with III). Professor Ware

III—Modern Architectural History—The Rennaissance—modern revivals—American architecture. 2 hours, first term, with reading of French text-book by the second-year men and of a German text-book by the third-year men. 2 hours reports and criticisms, and 12 hours research in library and drawing-room, second term. Exercises in historical design. See XV. Text-book: Palustre, L'Architecture de la Renaissance. Every other year to second and third classes together (alternating with II). Professor Hamlin

IV—The Theory oe Architecture—The theory of form, proportion, symbolism, the decorative arts, stained glass, mosaic, fresco. The theory of color, harmony of color, composition and style. 1 hour, second and third year classes together. Professor Ware

V—History of Ancient Ornament—The decorative forms of Egyptian, Assyrian, Greek, and Roman art. 1 hour, first year. Professor Hamlin

VI—History of Mediæval Ornament—Byzantine and Gothic ornament. 1 hour (alternating with VII), every other year to second and third classes together. Professor Hamlin

VII—History of Modern Ornament—Renaissance, Oriental, and Modern ornament. 1 hour (alternating with VI), every other year to second and third classes together. Professor Hamlin

VIII—The Elements of Architecture—Mouldings, the orders, pedestals, pilasters, pediments, intercolumniation, superposition, balusters and balustrades, arches and arcades, imposts, doors, windows, roofs, spires, steps, stairs, vaults, domes. Eighteen plates required. 2 hours, second term of first year. Professor Sherman

IX—Drawing—

A Architectural drawing, with brush, pencil, and pen; first year.

B Historical drawing, in connection with lectures on architectural history; first, second, and third years.

C Freehand drawing, with pencil, pen, and brush; sketching, drawings from the cast and from photographs of ornament, architectural detail, and the human figure; first, second, third, and fourth years. 15 hours during about half the year. Professor Hamlin, Mr. Kress, Mr. Harriman, and Mr. Warren

X—Projections, Intersections, and Shades and Shadows—2 hours, first term of first year. Twenty plates required. Professor Sherman

XI—Perspective—12 lectures, second year. Eight plates required. Professor Ware

XII—Descriptive Geometry, Stone-Cutting and Training—2 hours, fourth year. Twenty plates required. Professor Sherman

XIII—Practice, Specifications

1st, Masonry—stonework, brickwork, stone-work plastering.

2d, Woodwork—carpentry, joinery, plumbing, hardware, painting, glazing, roofing.

3d, Ironwork—steel and iron construction, processes of manufacture, joints, framing, and bracing.

The class copy a model specification and are examined upon the lectures. 1 hour, first, second, third, and fourth years. Mr. Warren

XIV—Architectural Engineering—Analytical mechanics—statics, elementary dynamics. Applied mechanics—foundations, retaining walls, walls, pillars, beams, trusses, arches, vaults, and domes. Text-books; Lanza's Applied Mechanics, Kidder's Hand-book. 2 hours, second and third years. Professor Sherman and Mr. Snelling

XV—Architectural Design—15 hours, second term of first year, first term of the second and third years, and during both terms of the fourth year. Problems in design: plans, elevations, sections, and details. Professors Ware and Hamlin

In the second year the problems involve special drill in the use of the orders; in the third and fourth years in planning and composition.

In the second and third years the afternoons of the second term are mainly occupied by historical study; but there are also a limited number of problems in historical design. See II and III.

XVI—Archæology—2 hours, second year, in French. Text-book: Corroyer, L'Architecture Gothique. 2 hours, third year, in German. Text-book: Redtenbacher, Mittelalterliche Bankunst. Mr. Kress

XVII—Architectural Essays—1 hour, first, second, and third years. Professor Ware

XVIII—Advanced Architectural History—2 hours, fourth year; reading and writing on special topics with illustrative drawings. Professor Ware

XIX—Advanced Architectural Design—Advanced problems in planning and composition. 20 hours, fourth year. Professor Hamlin

XX—Advanced Architectural Engineering—Practical examples in applied mechanics, treated both graphically and analytically. Problems in constructive design. 3 hours lectures, 15 hours practice, fourth year. Mr. Snelling

XXI—Advanced Practice—The study of building processes. 2 hours, fourth year. Mr. Warren

XXII—University Course in History and Design

XXIII—University Course in Construction and Practice

These two university courses are identical with the fourth-year elective courses ; XVIII, XIX, XX, and XXI. They are open to graduates of colleges and scientific schools who are qualified to take them, and to experienced draughtsmen.

Students are received for periods of two months at a time.

Equipment

The equipment of the department consists of about 15,000 photographs, about 900 books, a classified library of prints and plates, the Avery Architectural Library of about 10,000 volumes, a collection of MS. drawings from the École des Beaux-Arts, the Willard collection of architectural casts at the Metropolitan Museum, a collection of casts of architectural details from ancient and modern Roman buildings, a collection of building-stones, tools, and materials, and about 5000 lantern slides of architectural subjects.

Astronomy

John Krom Rees, A.M., E.M.....*Professor*
Harold Jacoby, A.B.....*Adjunct Professor*
Joseph Thompson Monell, C.E., E.E.....*Tutor*

General Statement

Course III is required of students in the School of Mines in the course of Civil Engineering, between their third and fourth years.

Course I is elective for juniors and seniors in the School of Arts ; Courses II and III for seniors in the same school ; and Courses II-VI for university students and candidates for the A.M. and Ph.D. degrees.

Courses

I—General Astronomy—This course is historical and descriptive, and is supplemented by visits to the Observatory, where students are taught to locate the principal constellations and are afforded opportunities to view the sun, moon, planets, nebulæ, and stars. Reference books : Young's General Astronomy, Grant's History of Physical Astronomy, Clerke's History of Astronomy during XIX Century, and Clerke's System of the Stars. 2 hours. Professor Rees, assisted in the Observatory by Mr. Monell

II—Spherical and Practical Astronomy—This course consists mainly of the study and use of the sextant for time and latitude determinations, and of the transit instrument for time. Reference book : Hand-book of Practical Astronomy by W. W. Campbell. 2 hours lectures and 2 hours observatory work. Professor Rees and Mr. Monell

III—Geodesy—This course deals with the subjects named below. During the vacation between the first and second years of this course, the students are required to attend the summer school for six weeks to learn the use of apparatus, as indicated by the following :

(1) Use of the nautical almanac and American ephemeris.

(2) Sextant observations for time and latitude.

(3) Transit instrument for time.
(4) Base line measurements.
(5) Angle measurements by "directions."
(6) Determination of the azimuth of a line.
(7) Barometric Hypsometry.

Reference books: Campbell's Practical Astronomy, Clark's Geodesy, United States Coast Survey Reports, and Jordan's Handbuch der Vermessungskunde. 2 hours lectures first year and first term of the second year. Professors REES, JACOBY, and Mr. MONELL

IV—ADVANCED SPHERICAL AND PRACTICAL ASTRONOMY—This course deals with the subjects of time, latitude, and longitude; use of equatorial and of zenith telescopes. Reference books: Chauvenet's (two vols.) Spherical and Practical Astronomy, and Doolittle's Practical Astronomy. 2 hours lectures and 4 hours observatory work for two years. Professors REES and JACOBY

V—THEORETICAL ASTRONOMY—This course deals mainly with the theory of comet orbits and their calculation. Reference books: Klinkerfues' Theoretische Astronomie and Oppolzer's Bahnbestimmung. 1 hour, supplemented by computations, for two years. Professors REES and JACOBY

VI—THEORY AND METHODS OF REDUCTION OF PHOTOGRAPHIC STAR PLATES—This course deals with the determination of star places from the photographic plates, and includes the subjects of stellar parallax and proper motion. 1 hour, with practical work, for two years. Professor JACOBY

Equipment

The apparatus of the department consists principally of the following:
(1) The Rutherfurd equatorial of 13 inches aperture with a correcting lens for photography.
(2) Three transit instruments.
(3) Two fine clocks and several chronometers.
(4) Three chronographs.
(5) Zenith telescope by Wanschaff of Berlin.
(6) Measuring machines for photographs by Rutherfurd and Repsold.
(7) Personal equation machine.
(8) Base-measuring apparatus.
(9) Theodolites with micrometer microscopes reading to a second of arc.

The library is well supplied with the books relating to the works of the department, having lately purchased the Struve collection of astronomical publications.

Biology

HENRY FAIRFIELD OSBORN, Sc.D.....*Professor*
EDMUND B. WILSON, Ph.D.....*Professor*
BASHFORD DEAN, Ph.D.....*Instructor*
GARY N. CALKINS, B.S.....*Tutor*
HENRY E. CRAMPTON, Jr., A.B.....*Assistant*
OLIVER S. STRONG.....*Lecturer*

General Statement

The courses in this department are all elective. They consist of lectures followed by from 4 to 8 hours of practical work in the laboratory, and are arranged consecutively, advancing from instruction belonging properly to a liberal education up to the highest specialization. First: The elementary Courses I and II are designed for general training in the principles of animal biology, as part of the general education of scientific and academic students. Second: The Courses III and IV follow, and are of a slightly more special character, being arranged for students preparing for advanced medicine, physiology, and geology. Third: The earlier University Courses V, VI, and VII are arranged as minor courses for students of palæontology, botany, and physiology, and as first-year courses for students of advanced biology. Fourth: The more special University Courses IV, VIII, IX, X, and XI are designed for the higher and research training of advanced university students.

In addition to the regular instruction of the department a series of general lectures upon contemporary questions in biology are given by invited lecturers and by different members of the biological staff of the university. They cover certain subjects which are not systematically treated in the current collegiate and university courses.

Courses in Animal Biology

I—Elementary Zoölogy—Introductory to biology, palæontology, geology. Descriptive of the various orders of animals. Lectures and demonstrations. Packard's Elements of Zoölogy. 1 hour. Dr. Dean

Open to second-year students, School of Mines.

II—Elementary Biology—Introductory to morphology, physiology, and general biology. A general course upon lower and higher organisms. Lectures and laboratory work. Parker's Elementary Biology; Marshall and Hurst's Practical Zoölogy. 2 afternoons (4 hours). Professors Wilson and Osborn

Elective for juniors, School of Arts.

III—General Zoölogy—More advanced treatment of subjects under Course II. Preparatory to biology and medicine. Lectures and laboratory work. Wiedersheim's Comparative Anatomy; Foster and Balfour's Elements of Embryology; Claus and Sedgwick, Zoölogy. 2 afternoons (4 hours). Professors Osborn and Wilson

Elective for seniors, School of Arts.

IV—Comparative Neurology—An introduction to the comparative structure of the brain and nervous system of the lower and higher animals. Lectures and laboratory work. Edinger's Lectures upon the nervous system. Also Obersteiner, Romanes, Retzius. 1 afternoon (3 hours). Dr. Strong

Open to seniors and university students.

V—Comparative Zoölogy—Anatomy and organogeny of vertebrates and invertebrates with reference to systematic zoölogy. Lectures and laboratory work. Wiedersheim's Grundriss der Vergleichenden Anatomie; Claus's Zoölogy; Lang's Comparative Anatomy. 6 hours (1 day). Professors Osborn and Wilson

Required of candidates for Ph.D. whose major or minor subject is Biology, first year.

VI—Comparative Embryology—A general comparative treatment of the earlier stages of development, with especial reference to vertebrates. 6 hours (1 day) through the first term (parallel with Course V). Foster and Balfour's Elements ; Marshall's Embryology. Professor Wilson

Required of all candidates for Ph.D. whose major subject is Biology.

VII—Cellular Biology—General structure and functions of the cell. 6 hours (1 day) through the second term (parallel with Course XII). Hertwig, Zelle und Gewebe. Professor Wilson

VIII—Morphology of the Mammals—A study of the structure and development of fossils and recent mammals. Lecture and laboratory courses. Flower's Osteology ; Flower and Lydekker ; Zittel's Palæontologie. 6 hours (1 day). Professor Osborn

Open to university students.

IX—Morphology of the Fishes—The comparative anatomy of the fishes, recent and fossil. Laboratory course in first term ; lecture and laboratory course in second term. Smith Woodward's Catalogue of Fossil Fishes. 6 hours (1 day). Dr. Dean

Open to School of Mines students, juniors and seniors in certain courses, and university students.

X—Special Morphology—The Protozoa. A general treatment of the classification, morphology, and physiology of this type of organisms, and of their relations to modern theories of biology. 1 hour second term. Bütschli, Protozoa in Bronn's Thierreich. Mr. Calkins

Open to university students.

XI—Advanced Biology—The study of special groups of animals or of special biological problems, as an introduction to original investigation. 12 hours (2 days).

Open to university students, second or third year.

XII—Special and Experimental Embryology—Critical treatment of the problems of cleavage, germ-layers, differentiation, and the general interpretation of development. 6 hours (1 day) through the second term (parallel with Course VII). Mark-Hertwig ; Heider and Korschelt. Professor Wilson

Open to university students.

The announcement of additional courses for 1895–96 will be made later in a special circular.

Equipment

Pending the construction of the permanent biological laboratory on the new university site, a thoroughly equipped laboratory has been arranged on the third floor of the northern wing of the College of Physicians and Surgeons (West 59th Street), including general and advanced laboratories, museum, aquaria, lecture-room, library, and reading-room. The equipment includes the best Zeiss microscopes, the higher apochromatic objectives, optical instruments, Leitz dissecting stands, and other apparatus for advanced morphological work. The teaching collections include a large series of the Naples marine types, a full set of standard and specially prepared charts, and a variety of living animals and plants contained in fresh-water and marine aquaria.

The departmental library, a part of the university library kept in the laboratory, the gift of Charles H. Senff, is a memorial to the late Dr. Northrop, and embraces full sets of the standard biological works, including the journals and a rapidly increasing collection of memoirs and special monographs. A fund is available for the purchase of literature needed in connection with the special researches of students. Forty-three of the current biological journals are subscribed for. One of the special features of the department is the Morphological Club, open to instructors and all advanced students of biology, and meeting every two weeks in the library to report upon special investigations and to present abstracts of special articles. The more important papers published from the laboratory are collected and reissued in *Studies from the Biological Laboratories of Columbia College*. Another feature in advanced instruction is connected with the biological section of the New York Academy of Sciences, which affords opportunities for the public reading, discussion, and printing of scientific papers.

The summer study of marine zoölogy is provided for in the connection of the department with the Marine Biological Laboratory at Wood's Holl, Mass., including subscription for an investigator's room ; also in special expeditions to various localities along the coast. The western palæontological expeditions conducted by the American Museum of Natural History are open to certain advanced students of vertebrate morphology.

Botany

NATHANIEL LORD BRITTON, E.M., Ph.D.....*Professor*
CARLTON C. CURTIS, Ph.D.....*Assistant*
———.....*Curator*

General Statement

Of the courses offered by the department, Course III is required of first-year students in the School of Mines in the courses in Chemistry, Mining Engineering, and Geology ; Course IV of second-year students in the same school in the course in Geology ; Course V of third-year students in the same course ; and Course VI of fourth-year students in the same course.

Courses I and II are elective for juniors and seniors in the School of Arts, and fourth-year students in the School of Medicine ; Courses IV, V, VI, and VII for seniors in the School of Arts and university students ; and Course III for seniors in the School of Arts and fourth-year students in the School of Medicine.

Courses VII to XIII are primarily for university students.

Courses

I—ELEMENTARY BOTANY, LONGER COURSE—Study of botany in its broadest sense, including introduction, plant anatomy, plant physiology, systematic botany in the biological sequence of the groups, morphology of the flowering plants, and a review of palæobotany. Text-book : Bastin's College Botany. 1 hour lecture and 4 hours (2 afternoons) laboratory work. Professor BRITTON and Dr. CURTIS

II—Elementary Botany, Shorter Course—Same as Course I. Text-book: Bastin's College Botany. 1 hour lecture and 2 hours (1 afternoon) laboratory work. Professor Britton and Dr. Curtis

III—General Botany—Description of the principal features of plant physiology and anatomy, and of the principal characteristics of the sub-kingdoms and classes. Text-book: Bastin's College Botany. 1 hour. Professor Britton

IV—Plant Anatomy and Physiology—Study of the principal characteristics of vegetable cells and tissues. Text-book: Goodale's Physiological Botany. Pre-requisite: Courses I or II or their equivalent. 2 hours laboratory work. Dr. Curtis

V—Morphology and Determination of the Flowering Plants—Dissection and examination of not less than one hundred species of flowering plants selected by the professor, followed by a systematic study of types of the natural families taken in biological sequence. Text-books: Gray's Structural Botany and Manual of Botany. Pre-requisite: Courses I or II, or their equivalent. 4 hours laboratory work. Professor Britton

VI—Economic Botany—Description of drug-plants, food-plants, fibre-plants, and timber-trees, and other plants of economic importance and their products. Pre-requisite: Courses I, II, or III, or their equivalent. 1 hour. Professor Britton

VII—Cryptogamic Botany—Description of the classes and principal families of Protophyta, Thallophyta, Bryophyta, and Pteridophyta, with examination of types selected by the professor. Text-book: Bennett and Murray's Cryptogamic Botany, and Vine's Text-book of Botany. Pre-requisite: Courses I, II, or their equivalent. 1 hour lecture or conference and 4 hours laboratory work. Professor Britton and Dr. Curtis

Open to candidates for the degree of A.M. whose minor subject is Botany.

VIII—Advanced Plant Anatomy—Critical study of the cells and tissues of some plant or plants selected. Text-book: De Bary's Comparative Anatomy of Phanerogams and Ferns. Pre-requisite: Course IV or its equivalent. At least 4 hours laboratory work. Dr. Curtis

Open to candidates for the degree of A.M. whose minor subject is Botany.

IX—The Natural Families of Flowering Plants—Study of the diagnostic characters of the families in biological sequence. Reference books: Engler and Prantl's Natürliche Pflanzenfamilien and Baillon's Histoire des Plantes. Pre-requisite: Course V. 1 hour conference and 4 hours laboratory work. Professor Britton

Open to candidates for the degree of A.M. whose major subject is Botany.

X—Advanced Cryptogamic Botany—Supplementary to Course VII. 1 hour lecture or conference and 4 hours laboratory work. Professor Britton and Dr. Curtis

Open to candidates for the degree of A.M. whose major subject is Botany.

XI—Comparative Study of the Tissues of not less than Ten Species of Plants of the Same Genus or Family—Not less than 8 hours laboratory work for two years. Research. Professor Britton and Dr. Curtis

Open to candidates for the degree of Ph.D. whose major subject is Botany.

XII—Collection, Determination, and Comparative Study of the Plants of Some Restricted Area—Field, herbarium, and laboratory work. Not less than 8 hours for two years; field work during two summers. Research. Professor Britton

Open to candidates for the degree of Ph.D. whose major subject is Botany.

XIII—Critical Study of a Family or Genus of Plants of not less than Fifty Species—Field, herbarium, and laboratory work. Not less than 8 hours for two years. Research. Professor Britton

Open to candidates for the degree of Ph.D. whose major subject is Botany.

Note—Any two of Courses VII, VIII, IX, or X may be taken as a minor for the degree of Ph.D.

Equipment

The botanical laboratory is situated on the upper floor of the School of Mines laboratory building. It is fitted up with tables and cases, and is equipped with compound and dissecting microscopes and accessories and other apparatus for study and investigation. There is a large collection of microscopic preparations. The courses of instruction are illustrated by extensive series of models, charts, and lantern slides. A greenhouse for the cultivation of plants used in instruction is located on the new College site.

The herbarium contains about 500,000 specimens, being one of the largest in America; additions are at present made to it at the rate of about 20,000 specimens a year. It comprises: (1) The collection accumulated by Dr. Torrey, which came into the possession of the College at his death in 1873. (2) The collection of Professor C. F. Meisner of Basle, Switzerland, presented to the College about the time of Dr. Torrey's death by Mr. John J. Crooke. (3) The collections of Dr. A. W. Chapman of Appalachicola, Florida, presented by Mr. Crooke at the same time, containing the types illustrating Dr. Chapman's Flora of the southern United States. (4) The mosses of the late C. F. Austin. (5) The mosses of the late Dr. J. G. Jaeger, recently acquired. (6) Miscellaneous accumulations since Dr. Torrey's death, now making up more than one third of the whole collection. The herbarium is rich in types of species described by Dr. Torrey, Professor Meisner, Dr. Chapman, Dr. Asa Gray, Mr. Austin, Professor Britton, and Dr. Morong. The various collections are now all arranged in a single series, but each sheet is identified by a designative label or stamp. There are also extensive collections of fruits, seeds, woods, and material illustrating economic botany, placed in cases and drawers.

The portion of the college library classified under botany is shelved in the room containing the herbarium. It now contains 3500 bound volumes and about 5000 pamphlets and extracts. These numbers do not, however, represent the whole reference strength of the collection, for all general works, scientific journals, and publications of general scientific societies are shelved in the main library. All the regularly published journals devoted to botany are received, and the sets of most of them are complete.

Chemistry

(*Including Microscopy and Microbiology*)

CHARLES F. CHANDLER, Ph.D., M.D., LL.D.....*Professor*
PIERRE DE PEYSTER RICKETTS, E.M., Ph.D.....*Professor*
CHARLES E. COLBY, E.M., C.E.....*Adjunct Professor*
CHARLES ERNEST PELLEW, E.M.....*Demonstrator*
JOSEPH ALBERT DEGHUÉE, Ph.D.....*Assistant Demonstrator*
JAMES S. C. WELLS, Ph.D.....*Instructor*
ALEXIS A. JULIEN, A.M., Ph.D.....*Instructor*
FERDINAND G. WIECHMANN, Ph.D.....*Instructor*
LOUIS H. LAUDY, Ph.D.....*Tutor*
HENRY C. BOWEN.....*Tutor*
HERMANN T. VULTÉ, Ph.D.....*Tutor*
EDMUND H. MILLER, A.M., Ph.D.....*Tutor*
ALEXANDER R. CUSHMAN, Ph.D.....*Assistant*
MARSTON T. BOGERT, A.B., Ph.B.....*Assistant*
WINFIELD JOHNSON, Ph.G.....*Assistant*
CLARK G. VOORHEES, A.M.....*Honorary Assistant*

Courses in Chemistry

I—GENERAL INORGANIC CHEMISTRY—Introduction. Laws of chemical combination, history, occurrence, preparation and properties of the elements and their principal compounds. Text-book: Fownes' Manual of Chemistry. 2 lectures and 1 recitation or 1 laboratory exercise. Professor CHANDLER, Dr. WIECHMANN, and Dr. VULTÉ

Required of all first-year students in the School of Mines. Open as an elective to sophomores, juniors, and seniors in the School of Arts; with 2 lectures and 1 afternoon in the laboratory.

II—PHYSICS AND GENERAL CHEMISTRY—Text-books: Ganot's Physics, Barker's Physics, and Fownes' Chemistry. 4 lectures during the first and 3 lectures during the second term. Professor CHANDLER

Required of first- and second-year students in the School of Medicine. Open as an elective to seniors in the School of Arts.

III—CHEMICAL PHYSICS—2 hours lectures and recitations first term. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to seniors in the School of Arts.

IV—STOICHIOMETRY—Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. 2 hours lectures and recitations second term. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to seniors in the School of Arts.

V—CHEMICAL PHILOSOPHY—Structure of molecules, periodic law, solutions, chemical energy, thermo-chemistry, photo-chemistry, electro-chemistry. Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. 2 hours lectures and recitations. Dr. WIECHMANN

Required of second-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open to candidates for the degree of A.M. and Ph.D. whose minor subject is Chemistry. Pre-requisite: Course IV.

VI—Chemical Philosophy, Advanced Course—History of chemical theory. Study of selected problems in theoretical chemistry. Scientific principles of chemical analysis. Physico-chemical methods. 4 hours lectures and conferences. Dr. Wiechmann

Open to candidates for the degree of Ph.D. whose minor subject is Chemistry. Pre-requisite: Courses IV and V.

VII—Preparation of Inorganic Compounds, Short Course—Laboratory work 5 afternoons and one conference during the last half of the second term. Text-book: Erdmann's Anleitung zur Darstellung Chemischer Präparate. Dr. Vulté

Required of third-year students in the course of Analytical and Applied Chemistry in the School of Mines.

VIII—Preparation of Inorganic Compounds, Long Course—8 hours and one conference. Bender and Erdmann's Chemische Präparatenkunde. Dr. Vulté

Open to candidates for the degree of A.M. whose major subject is Chemistry.

IX—Qualitative Analysis—Lectures, recitations, and laboratory practice. Text-book: Fresenius' Qualitative Analysis. 2 lectures, 2 recitations, and laboratory practice of at least 8 hours. Dr. Wells and Dr. Cushman

Required of first-year students in the School of Mines in the courses of Mining Engineering, Electrical Engineering, Metallurgy, Geology and Palæontology, and Analytical and Applied Chemistry. Open to seniors in the School of Arts. Pre-requisite or parallel: Course I.

X—Investigation of New Methods of Qualitative Analysis—Conferences and laboratory practice at least 10 hours. Dr. Wells

Open to candidates for the degree of A.M. whose major subject is Chemistry. Pre-requisite: Courses I and IX.

XI—The Spectroscope as Applied to Qualitative and Quantitative Analyses—Laboratory practice and conferences with the instructors, 8 hours. Professor Ricketts and Dr. Wells

Open to candidates for the degree of A.M. whose minor subject is Chemistry.

XII—Chemical Reactions, Qualitatively and Quantitatively Considered—Conferences and laboratory practice at least 8 hours. Dr. Wells and Mr. Bowen

Open to candidates for the degree of A.M. whose major subject is Chemistry.

XIII—Quantitative Analysis—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 2 lectures and 2 recitations and laboratory practice 15 hours throughout the second year and one session of the third year. Professor Ricketts, Mr. Bowen, and Dr. Vulté

Required of second- and third-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open to candidates for the degree of A.M. whose major subject is chemistry.

XIV—Quantitative Analysis—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and laboratory practice 15 hours during the second year and the first term of the third year. Professor Ricketts, Mr. Bowen, and Dr. Vulté

Required of second- and third-year students in the course of Metallurgy in the School of Mines.

XV—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of fourth-year students in the course of Geology and Palæontology in the School of Mines.

XVI—QUANTITATIVE ANALYSIS—Text-books: Cairns' Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and 15 hours laboratory practice. Professor RICKETTS and Dr. MILLER

Required of second-year students in the course of Mining Engineering in the School of Mines.

XVII—SPECIAL VOLUMETRIC METHODS OF QUANTITATIVE ANALYSIS—Conference and laboratory work at least 8 hours. Professor RICKETTS

Open to candidates for the degree of A.M. whose major subject is Chemistry.

XVIII—REVISION OF CONSTANTS EMPLOYED IN PROXIMATE ANALYSES—Conferences and laboratory work at least 12 hours. Professor RICKETTS and Dr. VULTÉ

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XIX—SPECIAL METHODS FOR THE ANALYSIS OF PLANTS AND THEIR PRODUCTS—Fibres, starches, sugars, oils. Conferences and laboratory work at least 12 hours. Research. Professor RICKETTS and Dr. VULTÉ

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XX—ELECTROLYTIC ANALYSIS, QUALITATIVE AND QUANTITATIVE—Conferences and laboratory work at least 12 hours for 2 years. Research. Professor RICKETTS and Dr. WELLS

Open to candidates for the degree of Ph.D. whose major subject is Chemistry.

XXI—ASSAYING—Ores and metallurgical products. Text-book: Ricketts' Notes on Assaying. 2 lectures, 2 recitations, and laboratory practice 15 hours for one term. Professor RICKETTS and Dr. MILLER

Required of third-year students in the courses of Mining Engineering, Geology and Palæontology. Metallurgy, and Analytical and Applied Chemistry in the School of Mines during the first session.

XXII—SPECIAL AND QUICK METHODS OF ASSAYING ORES, METALS, AND FURNACE PRODUCTS—Conferences and laboratory work 15 hours for one term. Professor RICKETTS and Dr. MILLER

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXIII—ORE TESTING FOR THE PROPER SELECTION OF METHODS OF TREATMENT—Conferences and laboratory practice one afternoon for one half of the second term. Professor RICKETTS and Dr. MILLER

Required of fourth-year students in the courses of Metallurgy and Mining Engineering. Open to candidates for the degree of A.M. whose minor subject is Chemistry.

XXIV—ORGANIC CHEMISTRY, ELEMENTARY COURSE—Lectures 4 hours. Professor COLBY

Open to candidates for the degree of A.M. whose minor subject is Chemistry.

XXV—General Organic Chemisty—Text-books: Richter's Chemie der Kohlenstoffverbindungen and Levy's Organische Präparate. Lectures and recitations 6 hours, and laboratory practice at least 15 hours. Professor Colby and Mr. Bogert

Required of fourth-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open to candidates for the degree of A.M. whose major subject is Chemistry.

XXVI—Advanced Organic Chemistry, Minor Courses—Any two of the following subjects: (1) Metallo-organic compounds and their properties; (2) The terpenes and camphors; (3) discussion of the pyrrol and pyridin bases; (4) Physical properties of organic compounds as related to their molecular constitution; (5) Studies in thermo-chemistry; (6) Synthetic alkaloids; and such other subjects as may be selected. Lectures, conferences, and laboratory practice not less than 15 hours. Professor Colby and Mr. Bogert

Open to candidates for the degree of Ph.D. whose minor subject is Chemistry. Prerequisite: Course XXIV or XXV.

XXVII—Advanced Organic Chemistry, Major Courses—Any one of the following subjects: (1) Prehnitol and its derivatives; (2) Adipic acid and its formation from aromatic compounds; (3) The substitution products of sulphobenzid; (4) Investigations on cyan-acids; and such other subjects as may be selected. Conferences and laboratory practice at least 15 hours. Research. Professor Colby and Mr. Bogert

Open to candidates for the degree of Ph.D. whose major subject is Chemistry. Prerequisite: Course XXV.

XXVIII—Physiological Chemistry—Including the preparation and properties of the chief constituents of plants and animals. Text-book: Pellew's Manual of Medical and Physiological Chemistry. This course is given twice a year, and consists of 2 lectures and 2 afternoons in the laboratory for one term. Mr. Pellew, Dr. Deghuée, and Mr. Johnson

Required of first-year students in the School of Medicine. Open as an elective to seniors in the School of Arts. Open to candidates for the degree of A.M. whose minor subject is chemistry.

XXIX—Applied Chemistry, General Course—The subjects discussed are: (1) Air: nature, sources of contamination, sewer gas, plumbing, draining, disinfection, ventilation. (2) Water: composition of natural waters, pollution, disposal of sewage and house refuse. (3) Artificial illumination: candles, oils, and lamps, petroleum, gas, and its products, electric light. (4) Limes, mortars, and cements. (5) Building stones: decay and preservation. (6) Timber and its preservation: pigments, paints, essential oils, varnishes, preserving processes. (7) Explosives: gun-powder, gun-cotton, nitro-glycerine. (8) Glass and ceramics. (9) Electro-metallurgy. (10) Photography. Text-books: Park's Hygiene and Wagner's Chemical Technology. 3 lectures. Professor Chandler

Required of all second-year students in the School of Mines.

XXX—Applied Chemistry, Special Course—The subjects discussed are: (1) Chemical manufactures: acids, alkalies, and salts. (*a*) Sulphur, sulphurous acid, hyposulphites, sulphuric acid, bisulphide of carbon. (*b*) Common salts,

soda ash, hydrochloric acid, chlorine, binoxide of manganese, bleaching-powder, chlorates, chlorimetry. (*c*) Carbonate of potash, caustic potash. (*d*) Nitric acid and nitrates. (*e*) Iodine, bromide. (*f*) Sodium, aluminium, magnesium. (*g*) Phosphorus, matches. (*h*) Ammonia salts. (*i*) Cyanides. (*j*) Alum, copperas, blue vitriol, salts of magnesia, baryta, strontia. (*k*) Borates, stannates, tungstates, chromates. (*l*) Salts of mercury and silver. (*m*) Oils, fats, soaps, and glycerine. (2) Food and drink: milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food. (3) Clothing: textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india-rubber, guttapercha. (4) Fertilizers: guano, superphosphates, poudrettes. Text-books: Wagner's Chemical Technology, Lunge's Manufacture of Sulphuric Acid and Soda; Schultz & Julius' Kuenstlichen Organischen Farbstoffe; Schultz' Chemie des Steinkohlentheers. 3 lectures and 1 recitation for two years; one half the subject being discussed each year. Professor CHANDLER and Mr. PELLEW

Required of third- and fourth-year students in the course of Analytical and Applied Chemistry.

Courses in Microscopy and Microbiology

XXXI—MICROSCOPY, SHORT COURSE—Simple and compound lenses, stands, construction, variety, choice, use, and care; objectives and oculars, optical principles, variety, care; method of work, illumination; the eyes, peculiarities, proper use, protection; drawing, free hand, with camera lucida; projection by mirror and by prism; magnification, and micrometry; mounting, dry, in solid and in liquid media; section cutting and staining; textile fibres; foods and adulterants; micro-chemistry; general accessory apparatus. Two exercises of 2 hours each. Dr. JULIEN

Required of students in the courses of Geology and Palæontology, and Analytical and Applied Chemistry in the second-year in the School of Mines.

XXXII—MICROSCOPY, LONG COURSE—Early history, higher optics, special accessories, and microscopical technique as above specified; section cutting with microtome, soft and hard tissues, crystals, rock sections, and loose grains, double staining, micro-refractometry, and homogeneous immersion fluids; micro-spectroscopy and blood examination; micro-mineralogy and micro-lithology; vegetable and animal fibres; paper, ink, and handwriting; urinary deposits; photo-micrography. 4 hours two years. Dr. JULIEN

Open to candidates for the degree of A.M. whose major subject is Chemistry, and for Ph.D. whose minor subject is Chemistry.

XXXIII—MICRO-CHEMISTRY, GENERAL TECHNIQUE—Salts of ten elements; micro-toxicology, spectroscopy, and blood; micro-refractometry. 2 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXIV—THE EXAMINATION OF FOODS AND DRUGS, GENERAL TECHNIQUE—Study of pure and adulterated foods and drugs. 2 hours. Dr. JULIEN

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXV—The Structure of Building Materials, General Technique—Rock-forming minerals, building stones, brick, and terra-cotta ; timber ; cast and wrought iron and steel. 4 hours. Dr. Julien

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXVI—Photo-Micrography, General Photography—Apparatus and lenses, light, color, sensitive plates, exposure, development, and printing. 4 hours. Dr. Julien

Open to candidates for the degree of A.M. or Ph.D. whose minor subject is Chemistry.

XXXVII—Microbiology—The use of high-power lenses, refraction images, adjustable collar, and immersion fluids, in the study of unicellular organisms, yeasts, amœbæ, infusoria, moulds, algæ and fungi of fresh waters ; fauna of potable waters ; general bacteriology, and the preparation of culture media ; examination of bacteria, staining, mounting ; air bacteria, examination of air of class-rooms ; water bacteria ; biological examination of Croton water, colonies, culture, and identification of species. Two exercises of 2 hours. Dr. Julien

Required of the third-year students in the courses of Geology and Palæontology and Analytical and Applied Chemistry in the School of Mines.

XXXVIII—Bacteriology, Long Course—Including : (*a*) General bacteriology, laboratory methods and technique, culture media, isolation of species in colonies, cultures, and identification. (*b*) Biological analyses of air and potable waters ; bacteria of sewage, of typhoid fever, and of Asiatic cholera ; bacteriological tests of disinfectants and germicides, and of water filters. Required 4 hours for two years. Dr. Julien

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Chemistry.

XXXIX—Brewers' Yeast, General Technique—Yeasts of malt, cider, and wines ; isolation of pure cultures ; trial of efficiency, and study of the products of fermentation ; examination of commercial samples. Required 4 hours. Dr. Julien

Open to candidates for the degree of A.M. whose major subject is Chemistry, and for the degree of Ph.D. whose minor subject is Chemistry.

Course in Toxicology

XL—Toxicology—The preparation and detection of the more important mineral and vegetable poisons. Fifteen weekly lectures and fifteen laboratory exercises of 2 hours each. The course is given twice during the year, the class being divided into four sections, two of which pursue the subject during the first session, the other two sections during the second session. Mr. Pellew, Dr. Deghuée, and Mr. Johnson

Optional for second-year students in the School of Medicine during the session of 1894–5 ; required of second-year students in the School of Medicine after that date.

Equipment

AT THE 49TH STREET BLOCK

I—There is a chemical lecture-room at the School of Mines fully supplied with apparatus and instruments and all modern facilities for the experimental illustration of the different lecture courses.

II—The museum of general inorganic and organic chemistry, and of the chemical arts, contains the elements and all their more important compounds; representative sets of specimens of all classes of organic compounds, materials, and products illustrating the chemical arts, together with models, pictures, and diagrams.

III—The Qualitative Laboratory is provided with tables, re-agents, and all the necessary facilities to enable each student to become familiar with the reactions of the different metals and salts. The student is required to repeat all the experiments of the course of instruction at his own table in this laboratory. When he has acquired a thorough experimental knowledge of a group of bases, single members of the group, or mixtures, are submitted to him for investigation. He thus proceeds from simple to complex cases, till he is able to determine the composition of the most difficult mixtures. Whenever necessary, he uses the spectroscope in his work.

IV—The Quantitative Laboratory is provided with tables, re-agents, and all necessary apparatus and instruments to enable the student to actually execute with his own hands quantitative analyses. He first analyzes substances of known composition, such as crystallized salts, that the accuracy of his work may be tested by the comparison of his results with the true percentages. He is then required to make analyses of materials occurring in commerce, or in the application of technical sanitary chemistry, metallurgy, and the like, as ores, fertilizers, and waters.

V—The Laboratory for General Inorganic Chemistry—A portion of one of the laboratories is set apart for the use of the students pursuing the course, and they are provided with the apparatus necessary to enable them to repeat all of the simpler experiments in general chemistry, such as the preparation of gases.

VI—Laboratory for the Preparation of Inorganic Compounds—A portion of one of the laboratories is set apart for the use of students pursuing Courses VII and VIII, and is provided with the necessary apparatus and materials.

VII—The Organic Laboratory is especially provided with all necessary apparatus and instruments for the determination of boiling points, melting points, specific gravities, vapor densities, for proximate and elementary analyses, and for the synthetic preparation of organic compounds.

VIII—The Assay Laboratory is provided with crucible, roasting and muffle furnaces for the fire assay of ores; also with sampling tables, stamp mill, amalgamators, and the like, for ore testing on a larger scale and with the necessary rolls and other apparatus for the wet assay of bullion.

IX—The Laboratories for Microscopy and Microbiology are situated in the upper story of the main building of the School of Mines, and are well lighted from the sides and from skylights. They are fully equipped with microscope stands for the use of the students, and with all apparatus and re-agents required for microscopical manipulations for those branches of biological study which are needed in sanitary and bacteriological investigations and for photo-micrography. There is a culture room for bacterial growths, a dark room for photo-micrographic work, culture baths, and sterilizing ovens, and the more important apparatus required in special investigations. The projection lantern with the electric light is in common use, and work tables are supplied with incandescent

lights. The interesting and extensive collection of microscopes and microscopic accessories and objects, bequeathed to the college by its late President, Dr. Barnard, are preserved in a glass case in this laboratory.

AT THE SCHOOL OF MEDICINE AT 437 WEST 59TH STREET

I—There is a Physical and Chemical Lecture Room, fully supplied with apparatus, instruments, and specimens for the illustration of the lectures on these subjects.

II—There is also a Chemical Laboratory fully equipped with chemical apparatus, microscopes, and other instruments, in which the students practise the processes of medical and physiological chemistry.

Diseases of Children

ABRAHAM JACOBI, M.D.....*Clinical Professor*
FRANCIS HUBER, M.D.....*Chief of Clinic*
JOSEPH HUBER, M.D.....*Clinical Assistant*
F. S. MACHALE, M.D.....*Clinical Assistant*
LOUIS M. SILVER, M.D.....*Clinical Assistant*
F. E. SONDERN, M.D.....*Clinical Assistant*
F. BIERHOFF, M.D.....*Clinical Assistant*

Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF CHILDREN—1 hour. Professor JACOBI

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF CHILDREN—10 lessons for each student. Dr. FRANCIS HUBER

Optional, in the third year, for candidates for the degree of M.D.

III—HOSPITAL CLINIC—Bellevue Hospital, Mondays, 2.30 P.M., from April to June. Professor JACOBI

Optional.

Dermatology

GEORGE HENRY FOX, M.D.....*Clinical Professor*
GEORGE THOMAS JACKSON, M.D.....*Chief of Clinic*
CHARLES C. RANSOM, M.D.....*Clinical Assistant*
JOHN CABOT, M.D.....*Clinical Assistant*
JOHN B. HUBER, M.D.....*Clinical Assistant*
J. H. P. HODGSON, M.D.....*Clinical Assistant*

Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF THE SKIN—1 hour. Professor FOX

Required, in the fourth year, of candidates for the degree of M.D.

II—Practical Instruction at the Vanderbilt Clinic in the Diagnosis and Treatment of the Diseases of the Skin—12 lessons for each student. Dr. G. T. Jackson

Optional, in the fourth year, for candidates for the degree of M.D.

Economics and Social Science

Richmond Mayo-Smith, Ph.D.....*Professor*
Edwin Robert Anderson Seligman, LL.B., Ph.D.....*Professor*
Franklin Henry Giddings, A.M.....*Professor*
William Zebina Ripley, Ph.D.....*Prize Lecturer*
Arthur M. Day, A.M.....*Assistant*

General Statement

The courses offered fall into two divisions: Political Economy and Finance, and Sociology and Statistics. Courses I (A) and II are the general introductory courses primarily intended for juniors in the School of Arts. Courses III and V are intended to give a general survey, respectively, of political economy and finance, from the historical and comparative point of view. While serving as useful courses for those intending to specialize still further in economics or sociology, they are especially recommended to those who desire to secure some knowledge of political economy as a part of a liberal education. Courses I to VIII will be found of especial value to law students seeking to supplement their purely legal studies. Course XVI is an introductory course leading up to Course XIX. Course XIX is the general systematic course laying the basis for the other courses in applied sociology. Courses XVI to XXI, together with Courses III and IV, will be of value to students of theology who wish to extend their knowledge of the social problems of the day.

In addition to the regular courses, there are four seminaria, organized to furnish students opportunity for special investigation and original research. The preliminary seminarium in political economy (XIII) is intended for seniors and those students who have had only one year in economics. Work in the seminaria in political economy (XIV and XV) takes place at the residences of the professors in a library especially arranged for this purpose. The other seminaria are conducted in the special seminarium rooms of the university.

The allied courses in history and public law will be found extremely useful for the students of social science, because of the close interrelations of history, law, and economics. Taken together these courses constitute a complete scheme of political science.

Course I (A) is required of juniors in the School of Arts. Course II is open to juniors in the School of Arts. Courses III, V, VI, and XVI are open to seniors in the School of Arts and other candidates for the degree of A.B. The remaining courses are intended for university students.

Courses in Political Economy and Finance

I (A)—Elements of Political Economy—Walker's Political Economy—Recitations and essays. 2 hours, second term. Professor Mayo-Smith and Mr. Day

M. or Tu. and W. at 1.30

(II)—Economic History—Selected text-books, recitations, essays, and lectures. 2 hours, second term. Professor Seligman and Mr. Day

III—Historical and Practical Political Economy—Lectures, discussions, and reading. 3 hours. Professor Mayo-Smith

M. and W. at 3.30, and F. at 1.30

IV—History of Political Economy—Lectures, discussions, and readings. 2 hours. Professor Seligman

Tu. and Th. at 3.30

V—Science of Finance—Lectures and private reading. 2 hours. Professor Seligman

Tu. and Th. at 4.30

VI—Financial History of the United States—Lectures and private reading. 2 hours, second term. Professor Seligman

[To be given in 1895–6, and every alternate year thereafter.]

Tu. and Th. at 3.30

VII—Tariff History of the United States—Lectures and private reading. 2 hours, first term. Professor Seligman

[To be given in 1895–6, and every alternate year thereafter.]

VIII—Railroad Problems—Lectures and private reading. 2 hours, first term. Professor Seligman

[To be given in 1895–6, and every alternate year thereafter.]

XIII—Preliminary Seminarium in Political Economy—Essays, discussions, and private reading. 2 hours. Professor Seligman and Mr. Day

F. 2.30 to 4.30

XIV—Seminarium in Political Economy—2 hours bi-weekly. Professor Mayo-Smith

T. evenings

XV—Seminarium in Political Economy and Finance—2½ hours bi-weekly. Professor Seligman

M. evenings

Courses in Sociology and Statistics

XVI—Physical Geography and Anthropology—Lectures and private reading. 2 hours. Dr. Ripley

Th. 10.30 to 12.30

XVII—Practical Statistics—Lectures, practical exercises, and private reading. 2 hours, first term. Professor Mayo-Smith

F. 2.30 to 4.30

XVIII—The Science of Statistics—Lectures and private reading. 2 hours. Professor Mayo-Smith

M. and W. 4.30

XIX—Socialism and Communism—Lectures and private reading. 2 hours. Professor Mayo-Smith

M. and W. 4.30

[To be given in 1895–6 and every alternate year thereafter.]

XX—General Sociology—Lectures and private reading. 2 hours, first term. Professor Giddings
F. 2.30 to 4.30

XXI—The Evolution of the Family—Lectures and private reading. 2 hours, second term. Professor Giddings
F. 2.30 to 4.30

XXII—Pauperism, Poor Laws, and Charities—Lectures and private reading. 2 hours, first term. Professor Giddings
M. and W. 1.30

XXIII—Crime and Penology—Lectures and private reading. 2 hours, second term. Professor Giddings
M. and W. 1.30

XXIX—Work in the Statistical Laboratory—Exercises in analyzing, criticising, and tabulating statistics. 3 hours. Professor Mayo-Smith
M. and W. 2.30 and F. 4.30

XXX—Seminarium in Sociology—2 hours, bi-weekly. Professor Giddings

Equipment

The library facilities are unexcelled. Every journal of importance, American or foreign, dealing with economics or social science, is taken regularly by the library. Any book needed by advanced students can usually be bought at once. The special library of history and political science comprises about sixty-five thousand volumes.

Students of economics and social science will find New York to be a centre of library facilities absolutely unrivalled elsewhere in this country. In addition to the university library, there are rich treasures at the Astor Library, Lenox Library, New York Historical Library, Long Island Historical Library, Library of the Charity Organization Society, the Bar Association Library, and the Law Institute Library, to each of which students have access under favorable conditions. Advanced students also have at their disposal the library of the professor of political economy and finance, which contains the most complete collection of works on political economy to be found in the United States.

The facilities offered to students of sociology include a large library of general and special works, and unusual opportunities for field work. A gift of $5000 for works on sociology has provided a very complete equipment of publications on sociological theory, the history of the family, pauperism, crime, and penology. Arrangements have been made with the Charity Organization Society, the University Settlement, the East-Side House, and the Brooklyn Bureau of Charities by which students can become fully acquainted with actual work among the people and with the most perfect methods. Special opportunities will be offered from time to time to qualified students to assist in preparing a complete descriptive sociology of New York City.

Engineering

CIVIL ENGINEERING

WILLIAM HUBERT BURR, C.E. *Professor*
ANDREW ERNEST FOYÉ, C.E. *Instructor*
GUSTAVE R. TUSKA, B.S., M.S., C.E. *Tutor*
ADOLPH BLACK, C.E *Assistant*

General Statement

The work in the Department of Civil Engineering is designed to afford a thorough analytical training, as well as numerous and extended practical exercises in those matters pertaining to the profession of the civil engineer. The theoretical portion of the instruction is based largely upon the courses given in the departments of Mathematics, Mechanics, and Physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures which the civil engineer is called upon to construct in the practice of his profession. The instruction is given by lectures, demonstrations by the students, and frequent conferences, co-ordinate with which the work of design is continuously carried on. Courses I to XVI inclusive are required of all students in Civil Engineering. Courses I, V, VI, XIV, XV, and XVI are required of all students in Mining Engineering, and Metallurgy. Course V is required of all students in Electrical Engineering. All courses are open as electives to any students who have had the requisite preparation to take them.

Courses

I—THEORY OF SURVEYING—Compass surveying—Farm surveying with preliminary work—Computations. Lectures and recitations 2 hours first term, first year. Reference books : Johnson's Theory of Surveying and Davies' Surveying. Mr. FOYÉ and Mr. BLACK

II—ROAD ENGINEERING—Surveys and location of roads—Drainage and grades—Foundations—Selection and treatment of materials—Telford and McAdam pavements—City pavements of brick, Belgian and granite blocks, asphalt, cement, and concrete—Machinery and tools required in the construction of roads and pavements—Maintenance of roads and pavements—Elements of expense and total cost of construction and maintenance. Reference book : Byrne's Highway Construction. Lectures and recitations. 2 hours first term, second year. Mr. FOYÉ

III—WATER-SUPPLY ENGINEERING AND IRRIGATION—Rainfall and storage —Flow of streams—Influence of soils, elevation, and geological character of water-shed—Methods of supply, gravitation, pumping from rivers or natural underground storage, flow from the latter.—Reservoir construction—Sedimentation and filtration—Distributing system—House supply and wastage.—Irrigation of land—Amounts and periods of application—Construction of, and flow through, division and distributing canals. Reference books : Fanning's Water Supply and Wilson's Irrigation Engineering. Lectures and recitations 2 hours second term, second year. Mr. FOYÉ

IV—Masonry Structures—Pressure and abutting power of earth—Design and construction of retaining walls—Stability of masonry structures in general—Stability of towers and chimneys under wind pressure—Theory and design of arches with vertical and inclined loads—Theory and design of reservoir walls, earth and high masonry dams—Cement, concrete, and masonry. Reference books: Cain's Retaining Walls and Baker's Masonry and Foundations. Lectures 1 hour during third year with frequent conferences and continuous work in design. $2\frac{1}{2}$ hours of problem and design work are required in the drawing academy. Mr. Tuska

V—Elasticity and Resistance of the Materials of Engineering—Laws of elasticity in homogeneous materials—Co-efficients of elasticity—Relations between stresses and strains—Common and exact theories of torsion and flexure—Elastic limits, working stresses, and ultimate resistances of wrought-iron, cast-iron, steel, alloys, timbers, building stones, cement, concrete, and masonry—Complete treatment of simple and continuous beams—The design and construction of iron, steel, and timber columns and beams, including the design and construction of plate girders—Shafts—Cables—Fatigue of materials—Specifications. 3 hours lectures and recitations during the first term, and 2 hours during the second term, third year. $7\frac{1}{2}$ hours first term, and 5 hours second term, of problem and design work, are required in the drawing academy. Reference and text-book: Burr's Elasticity and Resistance of Material. Professor Burr

VI—Graphic Statics—Equilibrium polygon, and polygonal frames for all systems of loads—Graphical representations of shears and moments for both non-continuous and continuous beams—Fixed and moving loads—Applications to bridge and railway trusses. 2 hours lectures during the second term, third year. 5 hours of problem and design work are required in the drawing academy. Reference book: Hoskin's Graphic Statics. Mr. Tuska

VII—Analytical Theory of Trusses—The truss element—Simple cantilever and non-continuous trusses with parallel chords—Fixed and moving loads—Through and deck spans—Positions of any system of concentrated moving loads for greatest chord and web stresses when chords are both parallel and not parallel—Combination of moment and graphic methods—Skew and irregular trusses—Applications to highway and railway trusses—Braced arches and arched ribs. 2 hours lectures during the second term, third year, with frequent conferences and problems in computations of stresses and preparation of stress sheets. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Professor Burr

VIII—Sewage Disposal—Treatment and disposal of sewage and refuse of manufacturing—Sedimentation by gravity and by chemical purification—Treatment of effluent by continuous and intermittent sand filtration—Fertilization—Intermittent application to soil with under-drainage—Disposal of sludge—Theory and construction of sand filters—Plants for sewage treatment—Pollution of potable water and its purification by continuous and intermittent sand

filtration—Design of sand filters for water purification. 2 lectures first term, third year. Professor BURR

IX—RAILROAD ENGINEERING—Economics of location, operation, and maintenance—Equating grades and curves—Estimating quantities and writing specification—Contracts—Track and switch work—Block and other systems of signalling—Buildings and structures—Organization. 3 lectures half of first term, and all of the second term, fourth year. Reference book: Parson's Track. Mr. FOYÉ

X—THE DESIGN AND CONSTRUCTION OF BRIDGES, ROOFS, AND BUILDINGS—Railway and highway bridges—Pin and riveted connections—Single and multiple systems of bracing—The design of details for bridges, roofs, and buildings—Floors for railway and highway bridges—The design and operation of draw-bridges, including engines, locking, lifting, and turning machinery—Cantilever structures—Wind loads and stresses—Single and double track viaducts or trestles in iron, steel, and timber—Lateral and transverse systems of bracing—The design and construction of elevated railroads—The complete design of a railway bridge, with estimate of cost—The erection of iron, steel, and timber structures, including the costs of erection. 2 hours lectures and recitations, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Professor BURR

XI—FOUNDATIONS—Earth foundations—Foundations for buildings—Safe loads on masonry and foundation beds—Pile driving and pile foundations—Safe loads for piles—Protection and preservation of piles and timber—Sheet piling and coffer-dam methods—Pneumatic foundations and caisson work—Open dredging—Bridge piers of masonry and cylinders—Piers for deep foundations—Methods of working in quicksands—Tunnelling. Reference books: Patton's Foundations and Baker's Masonry and Foundations. 2 hours lectures, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Professor BURR

XII—HYDRAULICS—Flow of water through orifices—Time required for discharge of canal locks and similar volumes—Weir discharge and gauging by weirs—Gauging of water for systems of irrigation—Flow through and discharge of pipes—Design of pipe systems for city water-works—The Venturi meter—Flow in and discharge of open canals and rivers—Gauging of streams by current meters, floats, and other means—Backwater—Impulse of streams. Reference book: Merriman's Hydraulics. 2 lectures during first term, of fourth year, with frequent conferences and problems. Professor BURR

XIII—THE DESIGN AND CONSTRUCTION OF SEWERS, AND RIVER AND HARBOR IMPROVEMENTS—Sewage and surface drainage of cities and towns—Separate and combined systems of sewers—Capacities of mains and branches—Catch basins—Manholes—Chimneys or ventilators—Flush tanks—Outfalls——Grades—Flow or discharge of sewers—Construction—Jetty system of river

improvements—Scouring action of currents—Erosion of river banks—Dams for improvement of river navigation—Breakwaters—Dykes—Groins—Buttress work—Docks—Harbor works—Iron piers—Estimates of cost. 2 lectures second term, fourth year, with frequent conferences. Professor BURR

The Summer School of Surveying

This school is conducted during ten to twelve weeks of each summer vacation at a point in the country near Litchfield, Conn., where ample facilities are provided for all requisite operations, and where the topography is admirably adapted to the practical work of surveying. The operations at the summer school include the entire actual surveying of the department of Civil Engineering, together with such lectures, computations, and mapping as pertain to it. About six weeks' continuous attendance is required of each class between the first and second, and the second and third years, and four weeks between the third and fourth years. The school possesses an unusually full equipment of engineer's and solar transits, levels, plane tables, compasses, and all accessories and smaller instruments. A corps of special assistants for each session aid the regular officers of the school. At each session the following courses are given :

XIV—SURVEYING BETWEEN THE FIRST AND SECOND YEARS—Pacing, chaining, and ranging—Farm survey—Adjustment of instruments—Angle reading by repetition—Repetition traverse. Daily lectures, field and office work. Mr. FOYÉ

XV—SURVEYING BETWEEN THE SECOND AND THIRD YEARS—Azimuth traverse—Levelling—Topographical survey with plane table—City surveys—Contour sketching. Daily lectures, field and office work. Mr. FOYÉ

XVI—SURVEYING BETWEEN THE THIRD AND FOURTH YEARS—Railroad surveying—Reconnaissance—Preliminary survey—Location—Cross-sectioning—Computations—A complete survey and location of a line two to five miles long are made, with all the attendant computations requisite for placing the work under contract. Daily lectures, field and office work. Mr. FOYÉ

A satisfactory Project or Thesis is required of every candidate for the degree of Civil Engineer at graduation.

ELECTRICAL ENGINEERING

FRANCIS B. CROCKER, E.M. *Professor*
GEORGE FRANCIS SEVER *Instructor*
WILLIAM HORATIO FREEDMAN, C.E., E.E. *Tutor*

General Statement

Of the courses offered by this department, Courses II, III, VIII, XI and XII are required of fourth-year students, candidates for the degree of Electrical Engineer ; Courses I, IV, VI, IX, and X, of third-year students, candidates for the degree of Electrical Engineer ; Course V of third-year students, candidates for the degrees of Mining Engineer, Civil Engineer, and Metallurgical

Engineer; and Course VII of second-year students, candidates for the degree of Electrical Engineer. Courses XIII to XX inclusive are elective for candidates for the A.M. and Ph.D. degrees.

The theoretical side of electrical engineering is treated by lectures delivered by Professor PUPIN in the department of Mechanics, under which head the various courses will be found.

Courses

I—DYNAMO PRACTICE—Principles, construction, operation, and design of dynamos and electric motors. (Dynamo Electric Machinery, Thompson; The Dynamo, Hawkins and Wallis.) 4 hours, first term. Professor CROCKER

II—ELECTRIC POWER—Transmission and distribution of electric power. (Electric Transmission of Energy, Kapp.) 3 hours, first term. Professor CROCKER

III—ELECTRICAL ENGINEERING—Electro-metallurgy and electro-chemistry, including production of metals and chemicals, theory and practice of primary and secondary batteries. Advanced telegraphy and telephony; including submarine, autographic, printing and multiplex telegraphy, and special signalling systems; special and peculiar applications of electricity. 1 hour, first term; 2 hours, second term. Professor CROCKER

IV—ELECTRIC LIGHTING—The design, installation, and operation, of electric lighting systems and plants, including a discussion of each of the various elements and methods employed. 3 hours, second term. Professor CROCKER

V—ELECTRICAL ENGINEERING—The principles of electrical engineering and their application to general engineering. 2 hours lectures and 2 hours laboratory work, second term. Professor CROCKER

VI—ELECTRICAL ENGINEERING—Telegraphy and Telephony. (Pope's Modern Practice of the Electric Telegraph; Poole's Practical Telephone Handbook.) 2 hours, second term. Professor CROCKER and Mr. FREEDMAN

VII—ELEMENTS OF ELECTRICAL ENGINEERING—General electrical principles, laws, measurement and the introduction to their applications. (Elementary Lessons in Electricity and Magnetism, Thompson.) 3 hours, second term. Professor CROCKER and Mr. FREEDMAN

VIII—ELECTRIC RAILWAY—Special instruction in design, installation, and operation of the various systems of electric railways. 2 hours, second term. Mr. SEVER

IX—ELECTRICAL MEASUREMENTS

1. A mathematical treatment of electrostatics, including theory of potential, capacity, specific inductive capacity, electrometer.

2. A mathematical treatment of magnetic induction, electric current, current sheets, resistance measurements, galvanometer.

2 hours. Mr. FREEDMAN

X—ELECTRICAL ENGINEERING LABORATORY

1. Direct current dynamos and motors—Tests of resistances, insulation, voltage, current, heating, friction and examination of mechanical construction.

2. Determination of energy consumed at various loads by transmission dynamometer and Prony brake; efficiency tests.

3. Determination and plotting of the various characteristic curves of dynamos and motors. Location and remedy of faults in dynamos and motors.

4. Operation of steam-engine and use of indicator in determining power used in dynamos.

8 hours. Mr. SEVER

XI—ELECTRICAL ENGINEERING LABORATORY

Alternating current dynamos, motors, and transformers.

1. Tests of resistances, insulation, voltage, current and heating.

2. Determination of efficiency.

3. Determination and plotting of characteristic curves and alternating current waves.

5 hours. Mr. SEVER

XII—ELECTRICAL ENGINEERING LABORATORY—Advanced electrical measurements and testing, including self-induction, capacity and magnetic measurements, thereby becoming familiar with the use of ballistic galvanometer, electrometer, electro-dynamometer, sechommeter, including tests of cables, and apparatus. 5 hours. Mr. FREEDMAN

XIII—HISTORY OF THE DEVELOPMENT OF THE APPLICATIONS OF ELECTRICITY. Professor CROCKER

XIV—THEORY OF ELECTROLYSIS AND OF PRIMARY AND SECONDARY BATTERIES. Professor CROCKER

XV—DIRECT CONVERSION OF THE ENERGY OF FUEL INTO ELECTRICITY. Professor CROCKER

XVI—SPECIAL FORMS OF DYNAMO AND MOTOR—High frequency, high potential and unipolar. Professor CROCKER

XVII—LONG-DISTANCE TRANSMISSION OF ELECTRIC POWER. Professor CROCKER

XVIII—THEORY OF THE TELEPHONE. Professor CROCKER

XIX—MULTIPLEX AND AUTOGRAPHIC TELEGRAPHY. Professor CROCKER

XX—SPECIAL APPLICATIONS OF ELECTRICITY TO MINING, MECHANICAL, CIVIL, AND METALLURGICAL ENGINEERING. Professor CROCKER

Equipment

The department of Electrical Engineering occupies five rooms; one used for lecture purposes, two for laboratories, and two for special investigations and experimental work by the officers of the department.

The apparatus of the department naturally divides itself into three classes:

a. Machinery.

b. Practical apparatus and measuring instruments.

c. Instruments of precision.

The machinery includes a steam-engine and complete electric-lighting plants of the three principal types, *i. e.*, arc, incandescent (direct current), and alternating current, each of practical size. These are in addition to the regular electric-lighting plant of the College, which has 1000-light capacity and is available for experiment and continuous supply of current. There are also a number of dynamos, motors, and dynamotors of various sizes and types, a lathe, electric-drill press, and tools of all kinds.

The practical apparatus consists of examples of apparatus used in telegraph and telephone work, and various primary and secondary batteries.

The practical measuring instruments furnish examples of almost every form of voltmeters, ammeters, wattmeters, and the like, many being duplicated.

The instruments of precision comprise a fine collection of standard resistances, condensers and cells, also standards of self-induction, standard ampere balances, and a standard Anthony bridge, together with numerous galvanometers, rheostats, electrometers, electro-dynamometers, and the like.

The department is also rapidly acquiring a very instructive museum, in which can be found illustrations of the various electrical devices and materials used in practice.

MECHANICAL ENGINEERING

FREDERIC R. HUTTON, C.E., Ph.D. *Professor*
RALPH E. MAYER, C.E. *Instructor*
IRA H. WOOLSON, E.M. *Instructor*
LUTHER E. GREGORY, C.E *Assistant*
THOMAS H. HARRINGTON, C.E. *Assistant*

General Statement

Special students are admitted to the courses for which previous training may have fitted them. All courses intended for undergraduates in the School of Mines may be pursued by graduates of that or other schools of like grade and standing as graduates' courses, the instruction for such persons being carried further in specialization than the time available permits to candidates for undergraduate degrees. The instruction for such advanced students will be by prescribed reading, by problems assigned, and by work in the mechanical laboratories under individual instruction. These supplementary courses will vary in difficulty with the amount of time necessary according to the needs of the individual and the subject. Experimental investigation is a special feature of such work in Courses V to XIII, XVI, and XXII. The first additional courses to be provided for university students solely will be : XX, XXI, and XXII.

Courses

I*—ELEMENTARY MECHANICAL DRAWING—First term, use of instruments, elementary projections; second term, descriptive geometry, graphics, and stereotomy. 3 hours lectures, 10 hours drawing academy. Mr. MAYER and Mr. HARRINGTON

Required of first-year students in all courses in the School of Mines except Architecture. Elective for seniors in the School of Arts.

* Courses I and II are conducted as courses in Mechanical Engineering by provisional assignment until further notice.

II*—Specialized Engineering Drawing—Topographical and geological, charts and map ; working and isometric drawing of machinery, furnaces, and structural work. Tracing and blue printing, and shop drawings. 3 hours lectures, 10 hours drawing academy. Mr. Mayer and Mr. Harrington

The work appropriate to their course is required of second-year students in all the Engineering courses.

III—Mechanical Engineering and Machine Design—Proportion of parts of machinery, special graphical statics, shop and working drawings for execution. 10 hours, alternate weeks in drawing room. Mr. Woolson and Mr. Gregory

Required of third-year students in the Electrical Engineering course.

IV—Advanced Thesis Drawing—From designs for assigned problem in engineering. Professor Hutton and Mr. Woolson

Required of fourth-year students in the Electrical Engineering course.

V—Properties of Materials—(A) General properties of all materials used in engineering, castings, and ingot metals. 2 hours lectures, first term. Professor Hutton

Required of third-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

VI—Properties of Materials—(B) Wrought iron and steel, fabrication and shop processes. Inspection of product, and tests of materials ; structural alloys. 2 hours lectures, second term ; laboratory work with testing machines. Professor Hutton, Mr. Woolson, and Mr. Gregory

Required of third-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

VII—Heat and its Applications—(A) Fuels for motive power, transfer of heat, generation of steam, chimneys, artificial draft, use of steam in engines. 2 hours lectures, first term ; laboratory practice. Professor Hutton and Mr. Gregory

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

VIII—Heat and its Applications—(B) Gas and air engines, combined vapor engines, ammonia and other vapor engines, air compressors, refrigerating machinery. 2 hours lectures, second term. Professor Hutton

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

IX—Design and Management of Boilers—Construction, typical forms, setting, running, tests, and inspection. 2 hours lectures, first term. Professor Hutton

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

* Courses I and II are conducted as courses in Mechanical Engineering by provisional assignment until further notice.

X—Design and Management of Engines—Construction, valve-gear, mechanisms, handling, erection, and repair. 4 lectures, second term. Professor Hutton

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XI—Motors Other than Steam—Animal, water, wind, and wave motors; turbines. 1 hour lecture, first term. Professor Hutton

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XII—Dynamics—Work of motors, friction, efficiency, dynamometers, governors, and regulators. 1 hour lecture, second term. Professor Hutton

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XIII—Machinery and Mechanism—Motion, velocity, transmissive principles, conversion of motion, teeth of wheels, general mechanism. 2 hours lectures. Mr. Woolson

Required of fourth-year students in all the Engineering courses and Metallurgy. Open to candidates for the degrees of A.M. and Ph.D. whose minor subject is Mechanical Engineering.

XIV—Pumps and Pumping Engines—Construction, design, mechanisms, types, valves, efficiency, duty, erection, and management. Special course of six lectures, first term. Professor Hutton

Required of students in Civil Engineering.

XV—The Locomotive Engine—The types of engine, their running gear, the boiler, the mechanism, the design and performance in hauling loads, the compound locomotive; accessory features to the motive power. 3 hours lectures, 10 weeks of first term. Mr. Woolson

Required of students in Civil Engineering.

XVI—Testing Efficiency of Motors—By dynamometer, by indicator, by measurement of rejected heat; calorimetry, engine-testing, boiler-testing. Special lectures and laboratory practice. Professor Hutton and Mr. Gregory

Open as an elective to students in Electrical and Civil Engineering, to candidates for the degree of A.M. whose minor subject is Mechanical Engineering and for the degree of Ph.D. whose major subject is Mechanical Engineering.

XVII—Testing of Materials of Engineering—Determinations of tensile, compressive, transverse, and torsional resistances; constants of formulæ; abrasive and frictional qualities of alloys. Special lectures and laboratory work. Professor Hutton, Mr. Woolson, and Mr. Gregory

Required of students in all the Engineering courses. Open to candidates for the degrees of A.M. and Ph.D. whose major subject is Mechanical Engineering.

XVIII—Cement Testing—Sampling, mixing, setting, and tension and compressive tests. Special lectures and laboratory practice. Mr. Woolson and Mr. Gregory

XIX—Vacation Class in Mechanical Engineering—During the latter half of the school year visits are made to shops, factories, iron and steel works,

and pumping stations, for the study of practice in these lines. The time occupied during the third year is variable according to circumstances. The instruction is conducted by Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

Open as an elective to all third-year students of Engineering.

XX — SHOP AND FACTORY ORGANIZATION AND MANAGEMENT — Cost, accounts, administration. (To be organized.)

XXI—HYDRAULIC ENGINEERING. (To be organized.)

XXII—MARINE ENGINEERING. (To be organized.)

Equipment

The department of Mechanical Engineering occupies the fourth floor of the two wings of the School of Mines building, and has laboratories near the ground in two other buildings.

For the courses in Drawing use is made of a very complete set of Olivier models, where warped surface elements are represented by tense threads ; of intersections of surfaces and the standard forms in stereotomy. For advanced work in machine design, actual models and full-sized specimens of machinery details in section, pumps, and injectors, are accessible to the students.

For the Properties of Materials courses a most valuable collection of new and old material, which has failed under strain, is continually receiving additions.

The Testing Laboratory is equipped with three standard machines for determining tensile, compressive, and transverse strength of material, a Fairbanks, Riehlé, and Emery of 50,000, 100,000, and 150,000 pounds' capacity, respectively. The latter machine is of the same type as the machine used in the Government Testing Works at Watertown, Mass., and is most remarkable for its sensitiveness and accuracy. It is particularly adapted for careful scientific investigation. The other machines are suited for rapid commercial work where extreme accuracy is not necessary. Keep's testing apparatus for cast iron under load and shock are available, and a Thurston lubricant testing machine can be used. Provisions are made for measuring the deformation of the various specimens by micrometers and extensimeters while in process of testing. New facilities for making all kinds of tests are continually being added.

The Cement Laboratory is furnished with a full complement of moulds, settling tanks, sieves, perforation wires, and a Riehlé testing machine with improved briquette holders.

For the courses in Heat and Steam the collections embrace representative types of much of the apparatus used by the engineer in his research and his daily practice. A battery of steam boiler injectors is mounted over a tank for experiment ; standard and test gauges, and a mercury column are available for calibration of instruments, steam-engine indicators and apparatus for standardizing ; anemometers to measure air currents and apparatus for calibration, calorimeters for measuring the moisture in steam, and pyrometers and thermometers for its temperature. The laboratories operate five small engines and

two pumps, and the department controls, for purposes of test and experiment, nine other large and small engines, operating college machinery outside of the laboratories. To measure power of motors are several Prony brakes and an Alden absorption dynamometer, and for measurement of transmitted power a Webber, a Van Winkle, and an Emerson dynamometer, so mounted that they can be mutually compared, and recording traction apparatus for measuring the direct effort of hauling cars. A Sturtevant fan blower furnishes a controllable resistance, and an opportunity for investigating such apparatus. The shop of the department has a lathe and a planer, and an equipment of bench-tools. A Wheeler surface condenser with necessary tanks, thermometers, and weighing scales enables the consumption of steam to be measured concurrently with the power developed.

The courses in Dynamics, Motors, and Mechanism are illustrated by models of transmission and convergence of motion, and of the different types of water wheels, turbines, and other motors.

A working specimen of the Westinghouse air brake is at the service of students in Railway Engineering, with air pump and all valves complete, and a working model of a locomotive engine to a full one-quarter scale is mounted on rails, and can be run by steam or compressed air.

For the other and for all courses a most abundant and complete library collection of drawings, photographs, blue-prints, and lantern slides enables instruction to be made most clear and pointed.

Great use is made in instruction of electrotypes from standard designs, prints from which are distributed in the class-room.

English

ENGLISH LANGUAGE AND LITERATURE

THOMAS RANDOLPH PRICE, M.A., LL.D.....*Professor*
A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D.....*Adjunct Professor*

Courses

I—SHAKSPERE: LANGUAGE, VERSIFICATION, AND METHOD OF DRAMATIC POETRY—2 hours. Professor PRICE

Open as an elective to seniors, and, with consent of professor, to juniors.

II—CHAUCER: LANGUAGE, VERSIFICATION, AND METHOD OF NARRATIVE POETRY—2 hours. Professor PRICE

Open as an elective to seniors and university students.

III—POPE: LANGUAGE, VERSIFICATION, AND POETICAL METHOD—2 hours. Professor PRICE

Open as an elective to seniors, and, with consent of professor, to juniors.

IV—ANGLO-SAXON PROSE AND HISTORICAL ENGLISH SYNTAX—2 hours. Professor PRICE

Open as an elective to university students, and, with consent of professor, to seniors.

V—ENGLISH LANGUAGE AND LITERATURE OF THE ELEVENTH, TWELFTH, AND THIRTEENTH CENTURIES—2 hours. Professor PRICE

Open as an elective to university students, and, with consent of professor, to seniors.

VI—Anglo-Saxon Language and Historical English Grammar—2 hours. Professor Jackson

Open as an elective to juniors and seniors.

VII—Anglo-Saxon Poetry—2 hours, first term. Professor Jackson

Open as an elective to university students and seniors.

VIII—English Language and Literature of the Fifteenth Century—2 hours, second term. Professor Jackson

Open as an elective to university students and seniors.

IX—English Drama, Exclusive of Shakspere, to the Closing of the Theatres—2 hours. Professors Jackson and Woodberry. (See Literature V).

Open as an elective to seniors and juniors.

LITERATURE

George Edward Woodberry, A.B.....*Professor*
Brander Matthews, A.M., LL.B.....*Professor*

General Statement

Of the courses offered by the department, A is prescribed for sophomores in the School of Arts, I to III and V to X are open to all university students; IV only to students who have already taken I.

Courses

A—Nineteenth Century English Literature—2 hours. Professor Woodberry

I—The History and Theory of Criticism—Plato, Aristotle, Horace, Quintilian, Sidney, Boileau, Dryden, Lessing, Coleridge. 2 hours. Professor Woodberry

II—The Epochs of the Drama—Greek, Latin, Spanish, English, French, German. 2 hours. Professor Brander Matthews

(Given in 1893–4, and each alternate year thereafter.)

III—The History of Modern Fiction—1 hour. Professor Brander Matthews

IV—The Practice of Criticism—A review of the greater works of literature, with specific original inquiries in particular epochs. Conferences and dissertations. Professor Woodberry

V—English Drama to the Closing of the Theatres (1640), Exclusive of Shakspere—2 hours. Professors Jackson and Woodberry. (See English IX).

VI—Spenser and the Elizabethan Poets, Exclusive of Drama—1 hour, first term. Professor Woodberry

VII—Milton and the Caroline Poets—1 hour, second term. Professor Woodberry

VIII—Eighteenth Century English Literature—2 hours. Professor Woodberry

IX—American Literature—2 hours. Professor Brander Matthews

X—The Art of English Versification—1 hour. Professor Brander Matthews

RHETORIC AND ENGLISH COMPOSITION

GEORGE RICE CARPENTER, A.B.....*Professor*
CHARLES SEARS BALDWIN, Ph.D.....*Instructor*
WILLIAM TENNEY BREWSTER, A.M.....*Tutor*

Courses

A—RHETORIC AND ENGLISH COMPOSITION—Carpenter's "Exercises in Rhetoric and English Composition." Recitations, weekly themes; in the second term lectures on certain English and American authors as models of style. 3 hours. Professor CARPENTER, Dr. BALDWIN, and Mr. BREWSTER

Prescribed for freshmen in the School of Arts.

B—PRACTICE IN VARIOUS KINDS OF ENGLISH COMPOSITION—Fletcher's "Introduction to Theme Writing." Fortnightly essays, lectures, and consultations. 1 hour. Dr. BALDWIN and Mr. BREWSTER

Prescribed for sophomores in the School of Arts. Pre-requisite: Course A.

C—FOUR ESSAYS—Voluntary lectures, consultations. Professor CARPENTER, Dr. BALDWIN, and Mr. BREWSTER

Prescribed for juniors in the School of Arts. Pre-requisite: Course B.

I—ENGLISH COMPOSITION—Daily themes and fortnightly essays, lectures, and consultations. 2 hours, first term. Professor CARPENTER

Open as an elective to juniors and seniors in the School of Arts. Pre-requisite: Course B.

II—ENGLISH COMPOSITION (Advanced Course)—Lectures and discussions in regard to style: essays and other written work. 2 hours, second term. Professor CARPENTER

Open as an elective to juniors and seniors in the School of Arts.

III—HISTORY OF RHETORIC—Methods of teaching rhetoric and English composition. 2 hours. Professor CARPENTER and Dr. BALDWIN

Especially intended for teachers and university students, but open as an elective to properly qualified seniors in the School of Arts.
(Not given in 1894-5.)

See also Literature X: The Art of English Versification. Professor Brander Matthews.

Genito-Urinary and Venereal Diseases

ROBERT W. TAYLOR, M.D.....*Clinical Professor*
JAMES R. HAYDEN, M.D.....*Chief of Clinic*
ROBERT H. GREENE, M.D.....*Clinical Assistant*
WILLIAM C. GILLEY, M.D.....*Clinical Assistant*
EDMOND Y. HILL, M.D.....*Clinical Assistant*
JOHN VAN DER POEL, M,D.....*Clinical Assistant*
JOHN B. STEIN, M.D.....*Clinical Assistant*
E. L. WILLIAMSON, M.D.....*Clinical Assistant*
J. C. P. VAN LOAN, M.D.....*Clinical Assistant*
W. B. BROUNER, M.D.....*Clinical Assistant*
J. E. SHRADY, M.D.....*Clinical Assistant*

Courses

I—Venereal and Genito-Urinary Diseases—Clinical lectures at the Vanderbilt Clinic. 1 hour. Professor Taylor

Required, in the third year, of candidates for the degree of M.D.

II—Practical Instruction at the Vanderbilt Clinic in the Diagnosis and Treatment of Venereal and Genito-Urinary Diseases—6 lessons for each student. Dr. Hayden

Optional, in the third year, for candidates for the degree of M.D.

III—Hospital Clinics in Venereal and Genito-Urinary Diseases—Bellevue Hospital, Tu. at 2 P.M. throughout the academic year. Professor Taylor. City Hospital, Blackwell's Island (formerly Charity Hospital), W. at 2 P.M., October 1 to January 1. Dr. Hayden

The Hospital Clinics are optional, in the third year, for candidates for the degree of M.D.

Geology

James Furman Kemp, A.B., E.M. *Professor*
Charles Arthur Hollick, Ph.B. *Tutor*
Gilbert van Ingen *Curator of the Geological Collections*

Courses

I—General Geology—First term, physical geology, with practical work in the rock collections under the lithological part of the subject; second term, stratigraphical and historical geology, involving laboratory work with type fossils and collections illustrating the geology of the United States. Text-book: Le Conte's Elements of Geology. 2 hours lectures, including laboratory work. Mr. Hollick

Elective for juniors and seniors in the School of Arts.

II—General Geology—A more elaborate discussion of the subjects treated in Course I. Text-book: Dana's Manual of Geology. 3 hours lectures. Professor Kemp

Required of all third-year students of the School of Mines in the courses of Mining, Metallurgy, Civil Engineering, Chemistry, and Geology. Elective to seniors in the School of Arts who have not had Course I.

III—Economic Geology—First term, discussion of the general features and formation of ore bodies, followed by a description of the deposits of the ores of iron, copper, lead, zinc, silver, gold, and the lesser metals, with especial reference to North America; second term, a description of the distribution and occurrence of coal, petroleum, natural gas, asphalt, building stone, water supply, salines, and minor minerals. Text-book: Kemp's Ore Deposits of the United States, and lecture notes privately printed. 3 hours lectures and conferences. Professor Kemp

Required of all fourth-year students of the School of Mines in the courses of Mining, Metallurgy, Chemistry, and Geology. That portion of the course relating to Building Stones is required of fourth-year students in the course in Architecture. Elective for seniors in the School of Arts who have had Course I or II or an equivalent. Open with two additional hours weekly of collateral reading to candidates for the degrees of A.M. and Ph.D. whose minor subject is Geology.

IV—General Geology—Preceded by short course in mineralogy under the department of Mineralogy. 2 hours lectures, first term. Mr. Hollick

Required of third-year students in the course in Architecture.

V—Petrography—A short course in the microscopic study of rocks. Follows Mineralogy VI. 2 lectures and one afternoon two months of the second term. Professor Kemp

Required of second-year students in the School of Mines, in the courses in Mining, Metallurgy, Chemistry, and Geology.

VI—Petrography—A discussion of the microscopic structure and mineralogical composition of the crystalline rocks, and of metamorphism. Pre-requisite: Optical Mineralogy. 2 hours lectures, 4 hours laboratory. Professor Kemp

Required of fourth-year students in the course in Geology. Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

VII—Invertebrate Palæontology—A general description of invertebrate fossils, following the biological sequence. Pre-requisite: Course I, department of Biology. Text-books: Zittel's Handbuch der Palæontologie, vol. i, and Nicholson's Manual of Palæontology. 2 hours lectures, 4 hours laboratory. Mr. van Ingen

Required of fourth-year students in the course in Geology. Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

VIII—Palæobotany—Study of fossil plants, following the biological sequence. Pre-requisite: Course I, Department of Botany. Text-book; Zittel's Handbuch der Palæontologie, vol. ii, and Solms-Laubach's Palæophytology. 1 hour lecture or conference,—4 hours laboratory or reading for two years. Mr. Hollick

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

IX—As a thesis subject which will furnish a major course for the concluding year of study for the degree of Ph.D. some such subject as the following will be assigned:

(a) Petrography of the Serpentines in the Vicinity of New York; (b) Geology of some restricted area, in Eastern North America; (c) Investigation of some Series of Ore Deposits; (d) Study of the Flora or Fauna of Certain Geological Horizons with Field work. The work will be done under the direction of that officer of the department who has given the subject special attention.

Equipment

The department of Geology has its museum and lecture room on the top floor of the Fourth Avenue building. The museum affords exceedingly complete illustrative series of specimens in stratigraphical and economic geology and in palæontology. It is open from eight to six to students and visitors. The collections of fossil fish and fossil plants are especially rich.

The laboratories and offices comprise the parlor and basement floor of the dwelling house, No. 52 East 49th Street, opposite the College. The equipment includes very complete collections of rocks and thin sections, some thousands in all, for work in microscopic petrography, eight petrographical micro-

scopes, micro-spectroscope, micro-camera, cameras for out-door photography, and grinder for making thin sections. The department has also placed with it the geological library of the late Professor Newberry, containing many rare volumes and pamphlets.

The College has an arrangement with the American Museum of Natural History which secures for advanced students especial privileges in its collections. As these contain the valuable and unique collection of Palæozoic fossils made by James Hall, the privilege is of especial consequence to students of palæontology.

Summer School

The trustees of the College have made an appropriation for a summer school in geology, which defrays the expenses of a small squad of advanced students for about one month each summer, with the professor of geology. During the college year, excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York.

Germanic Languages and Literature

HJALMAR HJORTH BOYESEN, Ph.D.....*Professor*
WILLIAM HENRY CARPENTER, Ph.D.....*Adjunct Professor*
EUGENE HOWARD BABBITT, A.B.....*Instructor*
HERMAN J. SCHMITZ, A.M.....*Lecturer*

General Statement

Courses A, B, I, II, III, IV, V, VI, VII, VIII, IX, and X are open to all university students; Courses I, II, III, IV, and VII also to juniors in the School of Arts; Courses XI and XII to advanced students only. Provision will be made for students desiring to begin German.

Courses

A—GERMAN—Whitney's Grammar; Buchheim's Heine's Prosa; Riehl's Kulturgeschichtliche Novellen. 3 hours. Mr. BABBITT

B—GERMAN—Goethe, Schiller, and Lessing. 3 hours. Professor BOYESEN
Course B is prescribed for sophomores who have taken Course A in their freshman year, unless Chemistry I is substituted in its place.

I—GOETHE'S FAUST—First and second parts, with commentary. 2 hours. Professor BOYESEN

II—HISTORY OF GERMAN LITERATURE—1 hour. Professor BOYESEN

III—SELECTED HISTORICAL PROSE, chiefly from Freytag's Bilder aus der Deutschen Vergangenheit—Reading at sight. 2 hours. Mr. BABBITT

IV—HISTORY OF THE GERMAN LANGUAGE—Lectures. 2 hours. Professor CARPENTER

V—ICELANDIC—Elementary course. Sweet, Icelandic Primer; Vigfusson and Powell, Icelandic Prose Reader. 2 hours. Professor CARPENTER

VI—Gothic—Wright, Primer of the Gothic Language; Braune, Gothic Grammar; Bernhardt, Die Gothische Bibel. 2 hours. Professor Carpenter

VII—Middle High German—Wright, Middle High German Primer; Paul, Mittelhochdeutsche Grammatik; Weinhold, Mittelhochdeutsches Lesebuch. 2 hours. Professor Carpenter

VIII—Old High German—Wright, Old High German Primer; Braune, Althochdeutsche Grammatik, Althochdeutsches Lesebuch. 2 hours. Professor Carpenter

IX—Germanic Mythology—1 hour, second term. Professor Carpenter

X—History of Danish and Norwegian Literature—1 hour. Professor Boyesen

XI—Seminar: Critical study of special periods in German literature. 1 hour. Professor Boyesen

XII—Old Norse or Icelandic Literature—Lectures. 2 hours, second term. Professor Boyesen

Greek

Augustus Chapman Merriam, A.M., Ph.D.....*Professor*
Edward Delavan Perry, Ph.D.....*Professor of Sanskrit Attached to the Greek Department*
Clarence Hoffman Young, A.M., Ph.D.....*Instructor*
William Cranston Lawton, A.B.....*Lecturer, 1894–5*
Mortimer Lamson Earle, Ph.D.....*Lecturer, 1894–5*

General Statement

There are two parallel courses in this department, one of the Greek language and literature, and one of Greek archæology and epigraphy. In both courses provision is made for students in the undergraduate department of the college proper, and for those in the graduate department or the School of Philosophy. The courses designated in the scheme of study as A and B, intended for the younger classes, are designed to enlarge and deepen the knowledge of the fundamental principles of the language, and at the same time to awaken the minds of the students to a perception of the beauties of the literature. With the junior year the study of Greek is made elective, and in that year and in the senior year the instruction deals less with grammatical principles, and enters more deeply into the thought of the authors read, the artistic construction of both poetry and prose, the public and private life, the art and archæology, the mythology and history of the Grecian people.

Course A is prescribed for freshmen in the School of Arts, B for sophomores, unless Chemistry is substituted, I–III are open as electives to juniors, IV–IX to seniors and university students, and X–XVI to university students only.

Courses designated by an *a* are open to the public, men and women alike, on payment of an auditor's fee.

Courses

A—Homer (Merriam's *Phœacians*), Greek Prose Composition—3 hours, first term; Lysias (Shuckburgh's *Selections*) or Andocides (Marchant's), Greek Prose Composition—3 hours, second term. Dr. Young

B—Euripides' Medea (Allen's) and Iphigenia in Tauris (Jerram's)—3 hours, first term; Plato's Protagoras (Towle's), Greek Prose Composition (optional). 3 hours, second term. Dr. Young

I—Sophocles, Œdipus Rex (Jebb's) and Antigone (Humphreys'), Thucydides, Books vi, vii (Lamberton's, Holden's, Smith's); Greek Composition (second term; optional). 3 hours. Dr. Earle

II—Æschylus, Prometheus (Weeklein's) and Septum contra Thebas (Flagg's); Demosthenes, Olynthiacs and Philippics (Tyler's); Plutarch, Demosthenes (Holden's). Greek Composition (second term; optional). 2 hours. Dr. Earle

III—Lectures on the Greek Drama. 1 hour. Prof. W. C. Lawton

a IV—Pindar and Theocritus, or the Agamemnon of Æschylus and the Frogs of Aristophanes; Demosthenes, De Corona, with parts of Æschines in Ctesiphontem. 2 hours. Professor Perry

a V—Lectures on the Epic and Lyric Poets—1 hour. Professor W. C. Lawton

a VI—New Testament—Epistles (Westcott and Hort's Text)—1 hour. Dr. Young

a VII—New Testament—Gospels and Acts (Westcott and Hort's Text—1 hour. Dr. Young

a VIII—Rapid Reading of Greek Tragedy—2 hours. Professor Perry

a IX—Lectures on Textual Criticism—1 hour. Dr. Earle

a X—Plato's Republic, Symposium, and Phædrus—2 hours. Professor Perry

a XI—Lectures on the History of Greek Art from the Monuments—Illustrated by lantern-slides, photographs, and other reproductions. Professor Merriam

Not given in 1894–5.

a XII—The Topography, Mythology, and Monuments of Ancient Greece—With readings from Pausanius (Teubner Text). Professor Merriam

Not given in 1894–5.

a XIII—Greek Dialects, on the Basis of Cauer's Delectus Inscriptionum Græcarum—2 hours. Professor Perry

a XIV—Historical Inscriptions and the History of the Attic Alphabets—Dittenberger's *Sylloge Inscriptionum Græcarum*, Part I, with practical exercises from a full series of "squeezes" from Attic inscriptions. 1 hour. Professor Merriam

a XV—Inscriptions Relating to Forms of Government, Religion, and Private Life—Dittenberger's *Sylloge Inscriptionum Græcarum*, Part II. 1 hour. Professor Merriam

a XVI—Archaic Inscriptions and the Alphabets of Greece—With practical exercises on representative "squeezes." Roberts' *Introduction to Greek Epigraphy*, Roehl's *Inscriptiones Græcæ Antiquissimæ*. 1 hour. Professor Merriam

Selections are made from Courses XIV, XV, XVI according to the needs of the students. In any of them practice will be given in the reading of "squeezes" and in the determination of the period of the inscription by the criteria from the forms of the letters and other characteristics. The aim of this method is to fit the student for practical work in the field or in museums.

None of these courses will be given in 1894–5.

Courses at the Union Theological Seminary

The following courses (possibly subject to some modifications) to be given in 1894–95 at the Union Theological Seminary, 700 Park Avenue, are open to university students in Columbia College.

First Term, October–December, 1894

History and Grammar of New Testament Greek, with Readings—2 hours. Professor Vincent

The Johannine Writings—2 hours. Professor Vincent

The Epistle to the Hebrews—1 hour. Professor Vincent

Second Term, January–April, 1895

The Gospel of Luke, or the Book of Acts—2 hours. Professor Vincent

The Pauline Epistles—3 hours. Professor Vincent

Equipment

The department is well equipped with maps, plans, and models. It possesses a large collection of photographs and photographic reproductions of Greek monuments, localities, and sculpture, books of illustrations, lantern-slides, and a few casts and electrotypes, for the illustration of ancient monuments, art, and daily life, and these are continually drawn upon wherever opportunity offers in reading or lectures, that the literature and the art may each complement the other. The Avery Collection of the library offers an unusual opportunity for further study of these subjects, with its richly illustrated works on art and archæology, as well as architecture, and forms an invaluable subsidiary to the department. This is again reinforced by the facilities offered through the arrangement between the College and the Metropolitan Museum of Art, by which students of this College are granted free access to all the museum collections for study and comparison. The department also possesses in its study a special library of selected books, which are placed at the disposal of university students; and the general library contains all the important serial publications, issued abroad and at home, in the field of philology and archæology. In Greek epigraphy its collection is almost complete. This is supplemented in the department by an extensive system of "squeezes" from the marbles in many parts of Greece and the British Museum, by means of which the study becomes more truly scientific than when pursued from published facsimiles exclusively.

Gynecology

George Montgomery Tuttle, M.D. *Professor*
Hersey Goodwin Locke, M.D. *Chief of Clinic*
George W. Jarman, M.D. *Clinical Assistant*
Gustav W. Bratenahl, M.D. *Clinical Assistant*
W. L. Stone, M.D. *Clinical Assistant*
J. B. Walker, M.D. *Clinical Assistant*
B. J. Stiefel, M.D. *Clinical Assistant*
E. H. L. McGinnis, M.D. *Clinical Assistant*

Courses

I—The Principles and Practice of Gynecology—Didactic lectures. 3 hours from March 15th to the end of the academic year. Professor Tuttle

Required, in the second and third years, of candidates for the degree of M.D.

II—Clinical Instruction at the Vanderbilt Clinic—1 hour. F. at 3 P.M. Professor Tuttle

Required, in the third year, of candidates for the degree of M.D.

III—Practical Instruction in Diagnosis, Treatment, and the Use of Instruments, Including Electro-Therapeutics—6 lessons for each student, at the Vanderbilt Clinic. Dr. Locke

Optional, in the third year, for candidates for the degree of M.D.

IV—Hospital Clinics in Operative Gynecology.

Roosevelt Hospital, McLane Operating Theatre.

To these clinics the students are invited, to witness the various surgical operations of gynecology. Tu., Th., and Sat. at 2.30 P.M., throughout the academic year. Professor Tuttle

Optional, in the third year, for candidates for the degree of M.D.

The McLane Operating Theatre of the Roosevelt Hospital

This is upon the hospital grounds, immediately opposite the College of Physicians and Surgeons, and is one of the most thoroughly equipped buildings in this country for instruction in the surgery of gynecology.

The cases upon which operations are demonstrated are taken from the gynecological wards of the Roosevelt Hospital, which are under the exclusive direction of the Professor of Gynecology, and the cases in which are all available for the instruction given by him.

History and Political Philosophy

John William Burgess, Ph.D., LL.D. *Professor*
Munroe Smith, A.M., J.U.D. *Professor*
Frank Johnson Goodnow, A.M., LL.B. *Professor*
Herbert Levi Osgood, Ph.D. *Adjunct Professor*
William Archibald Dunning, Ph.D. *Adjunct Professor*
Abram Charles Bernheim, LL.B., Ph.D. *Lecturer*
Frederic Bancroft, Ph.D. *Prize Lecturer*
George Louis Beer, A.M. *Prize Lecturer*
Frank Moore Colby, A.M. *Lecturer*

General Statement

The two groups of courses in this department, history and political philosophy, are intended partly for undergraduates and partly for those seeking the higher degrees. Course A is required for sophomores in the School of Arts, and Course B for juniors. Courses III, IV, V, and VI are elective for juniors only. For university students who desire a general view of history, either as an element in liberal culture or as preliminary to special work in law or political science, the courses particularly recommended are VII, VIII, XVI, and XXVI. These courses, together with XIX, XX, and XXI, are open to seniors in the School of Arts, and other candidates for the degree of A.B. Courses XVII and XXX are open only to advanced students who are qualified to do special detailed work in the respective subjects. Attention is particularly called to the following courses, which, while given in other departments, deal with subjects which constitute an integral part of the domain of history; history of European law; general history of diplomacy; history of American diplomacy; and the historical courses in the department of Economics and Social Science.

Courses in History

A (I)—Mediæval and Modern History—Recitations on Myer's Outlines, with supplementary lectures. 2 hours. Mr. Colby

B (II)—European History since 1815—Recitations on Fyffe's History of Modern Europe; reading and reports. 2 hours, first term. Professor Dunning and Mr. Colby

III—Roman History—Recitations, based on Pelham's History of Rome, with collateral reading and reports. 2 hours, first term. Professor Munroe Smith

IV—English History—Recitations and reading. 1 hour. Professor Osgood

V—American History—Recitations, reading, and reports. 2 hours. Professor Dunning

VI—Historical and Political Geography—1 hour. Professor Goodnow

VII—General Political and Constitutional History of Europe—Lectures and private reading. 4 hours, first term. Professor Osgood

VIII—Political and Constitutional History of England—Lectures and private reading. 2 hours. Professor Osgood

IX—Development of the French Monarchy—Lectures. 2 hours, second term. Mr. Beer

XV—Seminarium in European History—1 hour. Professor Osgood

XVI—Political and Constitutional History of the United States—Lectures and private reading. 4 hours, second term. Professor Burgess

XVII—Political History of the Colonies and of the American Revolution—Investigation course. 2 hours. Professor Osgood

XVIII—The United States during Civil War and Reconstruction—Lectures and private reading. 2 hours, second term. Professor Dunning

XXI—History of United States from 1848 to 1861—Lectures. 1 hour, second term. Dr. Bancroft

XXII—History of the City of New York—Lectures. 1 hour, first term. Dr. Bernheim. (*Cf.* Public Law, XIX.)

XXV—Seminarium in Early American History—1 hour. Professor Osgood

Courses in Political Philosophy

XXVI—General History of Political Theories—Lectures, with references to Janet, Histoire de la Science Politique; Bluntschli, Geschichte der neueren Staatswissenschaften; and Pollock, History of the Science of Politics. 3 hours. Professor Dunning

XXVII—American Political Philosophy—Assigned reading, essays, and discussions. 1 hour (or 2 hours each alternate week). Professor Dunning

XXX—Seminarium in Political Philosophy—1 hour. Professor Dunning

Equipment

The department employs in its work the best German historical maps, and one of the four largest relief globes ever made. In the special library of political science, numbering 60,000 volumes, are to be found all the most valuable works for either general reading or special research; and this is supplemented by the rich collections of the Astor and Lenox Libraries as well as those of the Bar Association and the New York and Long Island Historical Societies, all of which are readily accessible to students of the department. Under the auspices of the Academy of Political Science, to which advanced students are eligible as members, opportunities are given for the discussion of questions of interest as presented in papers by specialists.

Laryngology

(Including Diseases of the Larynx, Pharynx, and Nose)

George Morewood Lefferts, M.D. *Clinical Professor*
D. Bryson Delavan, M.D. *Chief of Clinic*
George A. Richards, M.D. *Clinical Assistant*
William K. Simpson, M.D. *Clinical Assistant*
J. D. Aspinwall, M.D. *Clinical Assistant*
Christopher J. Colles, M.D. *Clinical Assistant*
William Hallock Park, M.D. *Clinical Assistant*
James P. McEvoy, M.D. *Clinical Assistant*
John H. Billings, M.D. *Clinical Assistant*
Edward W. Perkins, M.D. *Clinical Assistant*
Richard Frothingham, M.D. *Clinical Assistant*
Alfonso A. Richardson, M.D. *Clinical Assistant*
Edward A. Scott, M.D. *Clinical Assistant*

I—Lectures at the Vanderbilt Clinic upon the Diseases of the Throat and Nose, with Laryngoscopic and Rhinoscopic Demonstrations.—A systematic course of didactic lectures, fully illustrated, as the subject demands, by the presentation or demonstration of patients. During the course all of the minor surgical operations upon throat and nose are performed in the presence of the class. The subjects and dates of the lectures are announced in printed form at the beginning of the session. 1 hour a week for twenty-eight weeks. Tu. at 2 P.M. Professor Lefferts

Required, in the third year, of candidates for the degree of M.D. in the three years' course.

II—Practical Instruction at the Vanderbilt Clinic in the Use of the Laryngoscope and Rhinoscope upon the "Phantom," and upon Adult Patients—The course is based upon the principle of short preliminary explanations, followed by practical work by the student, directly and personally supervised by the instructor. The necessary instruments and apparatus are furnished by the department. 6 lessons for each student in a division of ten. Dr. Delavan

Optional, in the third year, for candidates for the degree of M.D. in the three years' course.

Equipment

The department of Laryngology is equipped with a complete collection of the most approved modern instruments and appliances, by the best makers, for the diagnosis and treatment of the diseases of the throat and nose, and for the giving of instruction therein.

Among other things may be mentioned: a complete collection of the modern electric illuminating apparatus for the examination of patients; the electric laryngoscope; apparatus for the trans-illumination of the accessory cavities of the face; dilators, canulæ, and other instruments, used in the treatment of laryngeal stenosis; operative instruments by Pfau of Berlin; twelve laryngoscopic "phantoms," by Bock of Leipsic, for exercising the students in the use of the various instruments preliminary to the examination of the living subject; between one and two hundred anatomical models of the healthy and diseased larynx; by Steiger of Leipsic, and Tobold of Berlin. Models of the normal larynx by Bock of Leipsic, and by Auzoux of Paris; physiological models to illustrate the normal movements and the various paralyses of the vocal cords; a diagrammatic model, to illustrate the mechanical interference of laryngeal neoplasms with the act of phonation; photographs of the living larynx, in health and disease; three hundred and seventy water-color drawings by Wright of New York, of the pathological conditions of larynx, pharynx, naso-pharynx, and nasal passages. These are of large size (42 x 36) to illustrate the clinical lectures. A collection of photogravures of frozen sections of the head, and of drawings and instruments, to illustrate the operation of intubation.

The pathological and anatomical museum of the department contains at present one hundred and eleven carefully prepared and mounted wet preparations of the larynx and its diseases. This collection is specially rich in the rarer specimens, such as benign neoplasms of the larynx, intrinsic and extrinsic, laryngeal cancer, and others.

A series of mounted specimens of frozen head sections, illustrating the anatomy of the accessory sinuses of the nose and of the nasal passages, prepared by Dr. Blake, have recently (1894) been added.

Latin

HARRY THURSTON PECK, A.M., Ph.D., L.H.D.....*Professor*
JAMES C. EGBERT, JR., A.M., Ph.D.....*Instructor*
NELSON G. MCCREA, Ph.D.....*Tutor*
HENRY J. BURCHELL, JR., A.M.....*Assistant*

General Statement

Course A is required of freshmen in the School of Arts, B of sophomores, unless they elect Chemistry as a substitute; I–IV, and IX are open as electives to juniors, V–X to seniors and university students, XI–XVII to university students, and XIII, XIV, and XVII to seniors by special permission.

Courses

A—LIVY, BOOK XXI—Latin pronounciation. Review of the Syntax of the Moods. Latin prose composition. HORACE, ODES, EPODES, AND CARMEN SÆCULARE. Reviews of prosody, with the scanning of Horace. Reading at sight. 3 hours. Mr. BURCHELL

B—HORACE, SATIRES AND EPISTLES—Latin prose composition. SELECTED READINGS in prose and verse. Latin literature. 3 hours. Professor PECK and Dr. MCCREA

I—THE SATIRES OF JUVENAL—Lectures on the Roman Satirists. 2 hours, first term. Dr. EGBERT

II—THE ANDRIA AND HAUTON TIMORUMENOS OF TERENCE—Lectures on the Development of the Roman Drama. 1 hour. Professor PECK

III—EPIGRAMS OF MARTIAL—2 hours, second term. Dr. EGBERT

IV—THE TUSCULANÆ OF CICERO—2 hours, first term. Dr. MCCREA

V—LECTURES ON LATIN BIBLIOGRAPHY—1 hour. Professor PECK

VI—RAPID READING OF THE WHOLE OF JUVENAL AND PERSIUS—2 hours. Professor PECK

VII—THE EPISTULÆ AD LUCILIUM OF SENECA—2 hours, second term. Dr. MCCREA

VIII—LECTURES ON THE HISTORY AND DEVELOPMENT OF THE LATIN LANGUAGE DOWN TO THE PRESENT DAY—2 hours. Professor PECK

IX—PLAUTUS; LECTURES ON ROMAN COMEDY—2 hours. Dr. MCCREA

X—THE HISTORIES AND DIALOGUS OF TACITUS—3 hours. Dr. EGBERT

XI—TERTULLIAN; THE LIBER APOLOGETICUS—2 hours, first term. Dr. EGBERT

XII—READINGS FROM THE VULGATE—2 hours, second term. Dr. EGBERT

XIII—THE GEORGICS OF VERGIL—Lectures, essays, and private reading—2 hours. Dr. MCCREA

XIV—Epigraphy—The Origin, Development, and Morphology of the Latin Alphabet. Archaic Inscriptions. 1 hour. Dr. Egbert

XV—Inscriptions of the Imperial Period—Reading of inscriptions from the second volume of Wilmanns' *Exempla Inscriptionum Latinarum*. 1 hour. Dr. Egbert

XVI—Lectures on the History of Greek and Roman Prose Fiction, with Illustrative Readings—1 hour. Professor Peck

XVII—Original Composition in Latin Prose—2 hours. Professor Peck

Law

The courses offered in Law are here indicated. For full information as to the course leading to the degree of LL.B. consult the statement concerning the School of Law.

MUNICIPAL OR PRIVATE LAW

William A. Keener, A.M., LL.B.....*Professor*
George M. Cumming, A.B.....*Professor*
Francis M. Burdick, A.M., LL.B.....*Professor*
George W. Kirchwey, A.B.....*Professor*
Henry P. Starbuck, A.B., LL.B.....*Professor*
George F. Canfield, A.M., LL.B.....*Professor*
John Ordronaux, LL.D.....*Professor of Medical Jurisprudence*
Charles T. Terry, A.B., LL.B.....*Lecturer*
Ralph S. Rounds, A.B., LL.B.....*Prize Lecturer*

General Statement

Courses I to VI, inclusive, constitute the work of the first year in the Law School and are open to seniors in Arts. Courses VII to XV, inclusive, are open to students who have taken the work of the first year in law. Courses XVII to XXV, inclusive, are open to students who have taken the work of the first and second years in law. Course XVI is an optional and cannot be offered for a degree.

Courses

I—Elements of Jurisprudence and Equity—2 hours. Professor Keener

II—Contracts—2 hours. Professor Cumming

III—Real and Personal Property—3 hours. Professor Kirchwey

IV—Torts—2 hours. Professor Burdick

V—Law of Persons and Domestic Relations—2 hours, first term. Professor Starbuck

VI—Common Law Pleading and Practice—2 hours, second term. Professor Starbuck

VII—Contracts and Quasi-Contracts—3 hours. Professors Cumming and Starbuck

VIII—Equity—2 hours. Professor Keener

IX—Real and Personal Property—3 hours. Professor Kirchwey

X—Agency—2 hours. Professor Canfield

XI—Bailments and Carriers—2 hours. Mr. Rounds

XII—Sales of Personal Property—2 hours. Professor Burdick

XIII—Code Practice—2 hours, second term. Mr. Terry

XIV—Equity Pleading and Practice—2 hours, first term. Mr. Terry

XV—Insurance—2 hours, second term. Mr. Rounds

XVI—Medical Jurisprudence—3 hours, October to January. Professor Ordronaux

XVII—Code Pleading and Practice—2 hours. Mr. Terry

XVIII—Corporations—2 hours. Professor Cumming

XIX—Equity—2 hours. Professor Keener

XX—Evidence—2 hours. Professors Kirchwey and Canfield

XXI—Negotiable Paper—2 hours. Professors Burdick and Canfield

XXII—Partnership—2 hours. Professor Burdick

XXIII—Suretyship and Mortgage—2 hours. Professor Starbuck

XXIV—Wills and Administration—2 hours. Professor Starbuck

XXV—Doctrines Peculiar to New York Law—1 hour. Mr. Canfield

PUBLIC LAW AND JURISPRUDENCE

John William Burgess, Ph.D., LL.D. *Professor*
Munroe Smith, A.M., J.U.D. *Professor*
Frank Johnson Goodnow, A.M., LL.B. *Professor*
John Bassett Moore, A.B. *Professor*
Abram Charles Bernheim, LL.B., Ph.D *Lecturer*

General Statement

The courses in this department fall into two divisions: Public Law and Jurisprudence. The purpose of the courses in public law is to give a complete general view of international, constitutional, administrative, and criminal law. They serve primarily to supplement the courses in the department of History and Economics, and to give with them a complete system of political science. In the second place, they supplement the courses offered by the department of Private Law, constituting with these a well-rounded legal curriculum. The courses in international, constitutional, and administrative law are also recommended to journalists, students of philosophy and theology, and in general to all who desire to understand the organization and working of our governmental system. The courses in Criminal Law and in International Private Law (conflicts of private law) are more professional in their character, and are chiefly intended for law students.

The courses in Roman Law and Comparative Jurisprudence, while constituting an integral portion of a complete legal education, will be found useful to all those who desire a general comprehension of the principles of private law rather than a professional training in its details. The introductory course upon the Roman Law (XXI) and that upon European Legal History (XXIII) are especially recommended to students of history, economics, and philosophy.

Courses in Public Law

A—Constitutional Law

I—Comparative Constitutional Law of the Principal European States and the United States—Lectures, 3 hours, after the first of December. Professor Burgess

II—Comparative Constitutional Law of the Several Commonwealths of the American Union—10 lectures, in May. Dr. Bernheim

V—Seminarium in the Constitutional Law of the United States—Investigation and discussion. 2 hours, after the first of December. Professor Burgess

The courses on the Constitutional History of Europe, England, and the United States (cf. courses in History) are regarded as a necessary introduction to the above courses on Constitutional Law.

B—International Law

VI—History of Diplomacy—Lectures, 2 hours, first term. Professor Moore

VII—History of American Diplomacy—Lectures, 2 hours, second term. Professor Moore

VIII—International Law—Lectures, 2 hours. Professor Moore

X—Seminarium in International Law. Professor Moore

C—Criminal Law

XI—Criminal Law, Including the Conflict of Penal Laws, and Extradition—Lectures, 2 hours. Professor Moore

D—Administrative Law

XVI—Comparative Administrative Law—Lectures, 2 hours. Professor Goodnow

XVII—Law of Municipal Corporations—Lectures, 2 hours, first term. Professor Goodnow

XVIII—Law of Taxation—Lectures, 2 hours, second term. Professor Goodnow

XIX—Comparative Administration of New York, London, and Paris—Lectures, 1 hour, second term. Dr. Bernheim

XX—Seminarium in Administrative Law. Professor Goodnow

Courses in Jurisprudence

XXI—Roman Law—Sohm's Institutes of Roman Law, supplemented by lectures. 2 hours, first term. Professor Munroe Smith

XXII—Roman Law—Discussion of selected cases from the Digest of Justinian. 2 hours, second term. Professor Munroe Smith

XXIII—History of European Law (primitive Aryan, old German, and Frankish law; the canon law; the reception of Justinian law in mediæval Europe; the reaction against the Roman law, canon and civil, and the movement toward national codification)—Lectures. 2 hours. Professor Munroe Smith (1895–6, and alternate years following.)

XXIV—Comparative Jurisprudence—Lectures and discussions. 2 hours. Professor Munroe Smith (1894–5, and alternate years following).

XXV—International Private Law (conflicts of private law)—Lectures and discussion of cases. 1 hour. Professor Munroe Smith

XXIX, XXX—Seminaria in Legal History and Comparative Legislation—Professor Munroe Smith

Materia Medica and Therapeutics

George L. Peabody, M.D.....*Professor*

Courses

Instruction in this department is both didactic and clinical.

I—The didactic course embraces general therapeutic considerations; modes of administering drugs; the individual drugs used in treating disease, their physiological effects and therapeutic uses, and the toxicological effects of such of them as are poisons; remedial measures other than the use of drugs, including electricity, dietetics, the use of water (including bathing and the administration of mineral waters); physical exercise, and the like.

The department has a full collection of all the drugs lectured upon, as well as of their important preparations. After each lecture every student has an opportunity of examining specimens of all the drugs and preparations that formed the subject of the lecture. 3 hours. Professor Peabody

Required, in the second and third years, of candidates for the degree of M.D.

II—The clinical instruction in therapeutics is given at the bedside in the wards of the New York Hospital.

A large number of patients are presented to the class, and abundant opportunity is afforded of observing the modifications in the natural course of diseases which are produced by therapeutic procedures, including not only the action of drugs but also the effects of such remedial measures as cold baths, wet packs, electricity, and the like.

Frequent opportunity is also given for the personal examination of patients by members of the class in attendance; and the entire course of protracted diseases, with their variations in symptoms and physical signs as well as in their treatment, can thus be observed.

Facilities are also extended for witnessing the performance of autopsies in fatal cases as frequently as the hospital regulations permit.

Twice a week for two months (M. and Th. at 2.30 P.M.). Professor PEABODY

Optional, in the second and third years, for candidates for the degree of M.D. Medical students are recommended to attend this course in the third year only.

For the New York Hospital, see table of contents.

Mathematics

JOHN HOWARD VAN AMRINGE, A.M., Ph.D., L.H.D.....*Professor*
JASPER TILLEROUS GOODWIN, A.M., LL.B.....*Adjunct Professor*
THOMAS SCOTT FISKE, A.M., Ph.D.....*Adjunct Professor*
JAMES MACLAY, C.E.....*Tutor*
EDWIN MORTIMER BLAKE, E.M., Ph.D.....*Assistant*
ARNON LYON SQUIERS, A.B.....*Assistant*
WALTER WHEELER COOK, A.B.....*Assistant*
JAMES FULLER BERRY, A.B.....*Assistant*

Courses

I—GEOMETRY, VOLUMETRIC AND SPHERICAL (Davies' Legendre, Books 6–9)—3 hours, first term. Professor FISKE

Required of freshmen in the School of Arts.

II—ALGEBRA FROM QUADRATICS (Peck's)—3 hours, second term. Professor FISKE

Required of freshmen in the School of Arts.

III—TRIGONOMETRY, PLANE, ANALYTICAL, AND SPHERICAL (Davies' Legendre)—2 hours. Mr. SQUIERS

Required of sophomores in the School of Arts.

IV—TRIGONOMETRY (as in Course III) AND ALGEBRA (Peck's) FROM SERIES. Mr. MACLAY

Required of all first-year students in the School of Mines, except those in the course of Architecture.

V—ANALYTICAL GEOMETRY (Wentworth's) THROUGH THE HYPERBOLA—4 hours, second term. Mr. MACLAY

Required of all first-year students in the School of Mines, except those in the course of Architecture.

VI—SHORT COURSE IN TRIGONOMETRY (analytical) AND ANALYTICAL GEOMETRY—2 hours, first term. Dr. BLAKE

Required of first-year students in the course of Architecture, School of Mines.

VII—SHORT COURSE IN DIFFERENTIAL AND INTEGRAL CALCULUS—2 hours, second term. Dr. BLAKE

Required of first-year students in the course of Architecture, School of Mines.

VIII—ANALYTICAL GEOMETRY (Wentworth's) FROM THE LOCI OF THE SECOND ORDER, AND DIFFERENTIAL AND INTEGRAL CALCULUS (Osborne's)—4 hours. Professor VAN AMRINGE

Required of second-year students in the School of Mines in the Engineering courses.

IX—ANALYTICAL GEOMETRY (Wentworth's)—3 hours. Professor VAN AMRINGE

Elective for juniors and seniors in the School of Arts.

X—Projective Geometry—2 hours. Mr. Maclay

Elective for juniors and seniors in the School of Arts.

XI—Theory of Equations and Advanced Analytical Geometry—3 hours. Mr. Maclay

Elective for seniors in the School of Arts who have taken IX. Not given in 1894–5.

XII—Differential and Integral Calculus (Osborne's)—3 hours. Professor Van Amringe

Elective for juniors and seniors in the School of Arts.

XIII—Advanced Differential and Integral Calculus (based on Williamson's treatises)—3 hours. Mr. Maclay and Dr. Blake

For A.M. and Ph.D.

XIV—Introduction to the Analytical Theory of Curves of Double Curvature and Curved Surfaces—3 hours, first term. Mr. Maclay

For A.M. and Ph.D.

XV—General Differential Equations (based on Johnson's treatise)—3 hours, second term. Dr. Blake

For A.M. and Ph.D.

XVI—Continuous Transformation Groups (based on Lie's treatises)—3 hours. Dr. Blake

For A.M. and Ph.D.

XVII—Theory of Invariants (based on treatises of Salmon and Gorda).—3 hours, first term. Dr. Fiske

For A.M. and Ph.D. Not given in 1894–5.

XVIII—Theory of Substitutions (based on Serret and Cole's edition of Netto)—3 hours, second term. Dr. Fiske

For A.M. and Ph.D. Not given in 1894–5.

XIX—General Theory of Functions (based on Forsyth and on Harkness & Morley)—3 hours, first term. Dr. Fiske

For A.M. and Ph.D.

XX—Elliptic Functions (based on Halphen and on Tannery & Molk)—3 hours, second term. Dr. Fiske

For A.M. and Ph.D.

XXI—Abelian Function (based on Neumann and on Appell & Goursat)—3 hours, first term. Dr. Fiske

For A.M. and Ph.D.

XXII—Automorphic Functions (based in part on Klein's Elliptic-Modular Functions)—3 hours, second term. Dr. Fiske

For A.M. and Ph.D.

Equipment

In the equipment of the Department of Mathematics is a large number of models, charts, and instruments. An elaborate set of models illustrates the metric system of weights and measures. A set of about fifty models of elementary solid and spherical geometry is intended to exemplify the demonstrations contained in Davies' Legendre. These are made of cherry wood with markings of inlaid ebony, and are of unusually large size. There are several similar

models representing the different plane sections of the cone. A series of wooden models, constructed by Schroeder of Darmstadt, also illustrates elementary solid geometry, and contains, in addition, examples of all the different forms of the surfaces of the second order. There is a series of models of descriptive geometry, also constructed by Schroeder. The horizontal and vertical projections are traced upon boards solidly joined together at right angles and of convenient size to allow in general the representation of three different models or of three different views of the same model. The form and construction suggest a division of these models into two classes: (1) the representation in metal of lines and surfaces, adjusted upon axes, the projections of several of their positions being given; (2) the representation of solid bodies in hard wood including the exhibition of their plane sections in various directions and the intersections of different surfaces and solids.

A collection of models, which was presented to the department by President Low, having been purchased by him from the German University Exhibit at the Chicago Exposition in 1893, illustrates analysis situs, theory of functions of a complex variable, surfaces of higher order, their singularities and curvature, and line-geometry.

A series of charts illustrates the theory of plane algebraic curves, especially those of the fourth order, the resolution of higher plane singularities into equivalent elementary singularities, the expression of functions by means of infinite series and infinite products, and conformal representation by means of algebraic and elliptic functions.

Among the instruments of the department are an Amsler's planimeter, many instruments for executing geometrical constructions upon blackboard and paper, a collection of curves of different sizes in wood and hard rubber, and several pieces of apparatus for describing the conic sections upon the blackboard in accordance with the well known kinematic methods.

The collection of mathematical works in the Columbia College Library is especially rich in sets of collected works of mathematicians. All the mathematical journals of any importance are regularly received and the library possesses complete sets of most of them.

Mechanics

ROBERT SIMPSON WOODWARD, C.E., Ph.D. *Professor*
MICHAEL IDVORSKY PUPIN, Ph.D. *Adjunct Professor*
JOSEPH CLEMENT PFISTER, A.M. *Tutor*

General Statement

Courses I and III–IX may be pursued as minors for the degree of A.M. and Ph.D. by candidates who have not taken such courses in undergraduate work. 3 hours per week for one term constitutes a minor for the degree of A.M., and 3 hours per week for two terms a minor for the degree of Ph.D.

Time equivalent to 3 hours per week for four terms devoted to Courses X–XVII is required as a major for the degree of Ph.D., and 3 hours per week for two terms as a major for the degree of A.M. For a minor for the degree of Ph.D., a time equivalent to 2 hours per week for two terms is required.

Courses X and XI will alternate from year to year with XII and XIII, XII and XIII being assigned to the year 1894–5. Likewise, Courses XIV and XV alternate with XVI and XVII, XVI and XVII being assigned to the year 1894–5.

Courses

I—Analytical Mechanics—As a text for this subject, Rankine's Applied Mechanics is used ; attention being confined chiefly, however, to Part I, Principles of Statics (including hydrostatics) ; Part III, Principles of Kinematics ; and Part V, Principles of Dynamics (including hydrodynamics). This text is supplemented by lectures on special topics, by written solutions and discussions of typical problems, and by demonstrations with the aid of apparatus. Particular attention is given to the doctrine of units and dimensions of units, and to problems affording actual applications of principles. 3 hours. Professor Woodward

Required of students in Engineering ; and it is recommended to all students who may desire to pursue the higher applications of the science in dynamical astronomy, electricity and magnetism, thermodynamics, elasticity and physical geodesy.

II—Elementary Mechanics—Loney's Elements of Statics and Dynamics is used as a text. This work is supplemented by demonstrations with apparatus, by lectures on the theory of dimensions and units, and by lectures, chiefly historical, on the higher applications and results of the science. 2 hours. Mr. Pfister

Offered especially as an elective to students of the junior year in the School of Arts. It is designed to afford as good a knowledge of the science as can be had without the calculus. It assumes that the student has passed in Course III of the department of Mathematics or its equivalent.

III—Theoretical Mechanics—Ziwet's Elementary Treatise on Theoretical Mechanics is used as a text. This requires familiarity with the elements of the differential and integral calculus. 2 hours. Mr. Pfister

Designed to be supplementary to Course II, and is offered as an elective to those desiring a knowledge of the general principles of the science rather than the special principles essential to engineering.

IV—Thermodynamics, with special reference to its bearing on the theory of caloric engines—3 hours, first term. Professor Pupin

Required of all students in Engineering.

V—Elementary Thermodynamics—The ground covered by this course is indicated by Maxwell's Theory of Heat, which is used as a text. In addition, lectures are given on the more advanced principles and results of the science. 2 hours, one term. Professor Woodward

This course is offered as an elective to students of the senior year in the School of Arts. Its pre-requisite is Course II, or an equivalent.

VI—Theory of Dynamo and Motor (Introductory), covering elements of the theory of electric, magnetic, and electro-dynamic potential, theory of electro-magnetic and electro-dynamic induction and its application to the theory of an ideal dynamo—3 hours, first term. Professor Pupin

Required of students in Electrical Engineering.

VII—Theory of Dynamo and Motor (Direct Current), covering Hopkinson's theory of dynamo and motor designing, and Froehlich's method of dynamo and motor testing—3 hours, second term. Professor Pupin

Required of students in Electrical Engineering.

VIII—Theory of Alternators and Transformers—3 hours, first term. Professor Pupin

Required of students in Electrical Engineering.

IX—Theory of Variable Currents, particularly the theory of high frequency and high potential currents—2 hours, second term. Professor Pupin

Required of students in Electrical Engineering.

X—Advanced Theoretical Mechanics—General principles of statics and kinetics; methods of Lagrange, Hamilton, and Jacobi; applications of the doctrine of energy to the interpretation of mechanical phenomena. 2 hours. Professor Woodward

XI—Theory of the Potential Function—General exposition of theory; derivation of equations of Laplace and Poisson and theorems of Gauss, Green, and Stokes; with applications to problems in gravitation, hydromechanics, static electricity, and terrestrial magnetism. 2 hours. Professor Woodward

XII—Geodynamics—Amount and distribution of earth's mass; phenomena of precession, nutation, and oceanic tides; variation of density, gravity, and pressure within the earth; thermal properties and secular contraction of the earth; mechanics of crumpling and crust movements. 2 hours. Professor Woodward

XIII—Mathematical Theory of Elasticity—Analysis of stresses and strains and expression of strains in terms of stresses; discussion of potential energy of strained media and the constants essential to define them; theory of wave motion in elastic media, with applications to sound and light. 2 hours. Professsor Woodward

XIV—Maxwell's Theory of Electricity and Magnetism—2 hours.

XIVa—Theory of Bessel's Functions and Spherical Harmonics—1 hour. Professor Pupin

XV—Electromagnetic Theory of Light—3 hours, first term. Professor Pupin

XVI—Advanced Thermodynamics, including its applications to thermo-electricity and thermo-magnetism, physical chemistry, and caloric engines—2 hours. Professor Pupin

XVII—Advanced Theoretical Electrical Engineering, consisting of a discussion of the practical aspects of high frequency and high potential currents; theory of the telephone; theory of transmission of signal through cable possessing considerable capacity; theory of long-distance transmission of power by direct, alternating, and polyphase currents; conduction of currents through gases and dielectrics—3 hours, second term. Professor Pupin

Equipment

The department is supplied with various machines and models of machines for illustrating the so-called mechanical powers, with balances, dynamometers, air pump, hydraulic pumps, and other apparatus to which reference is made in the course of theoretical studies. In addition to its own appliances, the department has access to the apparatus of the allied departments, especially that of the department of Electrical Engineering, thus affording the facilities of an extensive equipment to the students in advanced work.

Mineralogy and Metallurgy

THOMAS EGLESTON, E.M., Ph.D., LL.D.....*Professor*

MINERALOGY

ALFRED J. MOSES, E.M., Ph.D.....*Adjunct Professor*
LEA MCI. LUQUER, C.E., Ph.D.....*Tutor*
HERBERT P. WHITLOCK, C.E.....*Assistant*

METALLURGY

JOSEPH STRUTHERS, Ph.B.....*Tutor*
PARKER C. MCILHINEY, A.M., Ph.D.....*Assistant*

Courses in Mineralogy

I—BLOWPIPE ANALYSIS—The tests for 40 elements and the qualitative analysis of minerals, alloys, and slags. 1 hour conference, and afternoons of alternate weeks laboratory, 1 term. Professor MOSES, Dr. LUQUER and Mr. WHITLOCK

Required of first-year students in the School of Mines in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open as an elective to seniors in the School of Arts.

II—CRYSTALLOGRAPHY—History, general characters, laws, forms, simple measurements, and calculations. Lectures and conferences 2 hours, 1 term. Professor MOSES

Required of first-year students in the School of Mines in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open as an elective to seniors in the School of Arts.

III—DESCRIPTIVE AND DETERMINATIVE MINERALOGY—Study of 200 important species, their properties, uses, and methods of determination. 2 hours lectures, 3 hours laboratory, second term of first year and first term of second year. Professor MOSES and Dr. LUQUER

Required of first- and second-year students in the School of Mines, in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology. Open to candidates for the degree of A.M., or for the degree of Ph.D., in their first year, whose minor subject is Mineralogy. Pre-requisite: Courses I and II.

IV—THE MINERALS OF BUILDING STONES—Study of 70 species, their properties, methods of determination, and their economic effect on building stones. 2 hours lectures, 2 hours laboratory. Professor MOSES and Dr. LUQUER

Required of second-year students in the School of Mines in the course of Civil Engineering. Open to candidates for the degree of A.M. whose minor subject is Mineralogy.

V—ELEMENTARY COURSE ON TWENTY-FIVE COMMON MINERALS—12 lectures in first term of third year as introduction to study of geology. Professor MOSES

Required of third-year students in the School of Mines in the course of Architecture.

VI—OPTICAL MINERALOGY—Introductory to Geology V. 2 lectures and 1 afternoon, for two months of second term of second year. Dr. LUQUER

Required of second-year students in the School of Mines in the courses of Mining Engineering, Chemistry, Metallurgy, and Geology.

VII—Mathematical Crystallography—Measurement of angles of crystals, methods of calculation and delineation. Professor Moses

Required of third-year students of the School of Mines in the course of Geology. Open to candidates for the degree of A.M. whose major subject is Mineralogy, or candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite: Course II.

VIII—Optical Mineralogy—Principles, apparatus, and distinguishing characters. Dr. Luquer

Required of third-year students in the School of Mines in the course of Geology. Open to candidates for the degree of A.M. whose major subject is Mineralogy, or to candidates for the degree of Ph.D. whose minor subject is Mineralogy.

IX—Mineralogy—Supplementary to Course III. Professor Moses

Open to candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite: Courses I, II, III, or equivalent.

X—Systematic Mineralogy—Classification: physical and chemical relations of species and groups; general study of physical properties, with especial attention to measurement, methods of calculation and delineation of crystals; optical characters; and a critical study of some assigned group. 20 hours, two years. Professor Moses and Dr. Luquer

Open to candidates for the degree of Ph.D. whose major subject is Mineralogy. Pre-requisite: Courses I, II, III, or equivalent.

Equipment

The work of the students in the College courses and in general mineralogy is performed in the blowpipe laboratory, a large room with conference tables and seats for about seventy-five men. In this room are the student collections of minerals and crystal models.

For the more advanced work the department uses a smaller room equipped for microscopic and goniometrical work. The equipment includes four lithological microscopes, five reflection goniometers, a Duboscq lantern with numerous attachments, three polariscopes, a specific gravity balance, and three section cutters.

The present mineralogical collection consists of about 26,000 labelled specimens, and includes, in addition to the main collection, a large suite of pseudomorphs, a collection illustrating the physical character of minerals, a collection of natural crystals, and a collection of New York City minerals. Arranged in wall cases are large specimens, showing the associations of minerals. There are also three separate student collections of average specimens, more than 6000 in number; several thousand unlabelled specimens used in determinative work, about 500 sections of minerals, and 1500 crystal models in wood and glass.

Among the collections of minerals that have been presented to the department from time to time are some that possess historic value, among which may be mentioned the Gillmore collections, made in Paris under the direction of the Abbé Hauy, an exhibit of Schulsberg (Wis.), stalactites at the Sanitary Fair, a fine suite of Russian minerals presented by the Czar, the two finest cerussites in the world, the Julian collection of minerals from Chesterfield, Mass., the famous collection of Professor How, of King's College, Nova Scotia, and a very valuable collection made by Dr. Egleston in Japan.

In addition, a large number of gifts of one or more specimens have been received, and these have been supplemented by careful purchasing and exchanging, so that the collection fairly ranks as one of the two or three great mineral collections of this country.

Courses in Metallurgy

I—General Metallurgy—As an introduction to Courses II, III, IV, and V, history, definition of terms, calorimetry, refractory materials, furnaces, fuels (natural and artificial), chimneys, blast engines, regulators, hot air stoves, tuyeres, pyrometry, furnace gas analysis.

Text books: Percy's metallurgy of fuels, iron, and steel, Bauermann's metallurgy of iron, Greenwood's metallurgy of iron and steel, Egleston's metallurgical tables.—3 hours lectures and 1 hour review, first term. Professor Egleston and Mr. Struthers

Required of third-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry in the School of Mines. Students in Metallurgy have an additional hour per week during the first half year for review and supplementary lectures by Mr. Struthers.

II—The Metallurgy of Iron and Steel.—*Cast Iron:* Discussion of ores, effect of impurities, construction of the blast furnace and auxiliary apparatus. Theory of the process, detailed discussion of practice, slags, calculation of charges, foundry practice, malleable cast iron.

Weld Iron: Properties, effect of impurities, knobbling process, German process, fining, puddling, rolls, shears, hammers, piling, reheating, and general mill work.

Direct methods for wrought iron: Catalin, Bloomary, Chenot, Blair, and other processes.

Steel: General description, effect of impurities, direct methods of manufacture, cementation process, crucible process, acid open-hearth process, acid Bessemer process, basic open-hearth process, basic Bessemer process, pit practice of handling ingots, general mill-work, including reheating, rolling, rails, tires, wire, and uses of scrap steel.

Text books: H. M. Howe's metallurgy of steel; Percy's metallurgy of fuels, iron, and steel; Greenwood's metallurgy of iron and steel; Egleston's metallurgical tables. 3 hours lectures and 1 hour review, second term. Dr. Egleston and Mr. Struthers

Required of third-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry in the School of Mines. Students in the course of Metallurgy have an additional hour during the second term for review and supplementary work by Mr. Struthers.

III—Metallurgy of the Metals.—*Copper:* Properties, effect of impurities, ores, roasting, shaft-furnace treatment, reverberatory-furnace treatment, treatment of native ores at Lake Superior, treatment of pure and poor sulphide ores, treatment of impure sulphide ores, Bessemerizing copper matter, treatment of oxides, wet processes, condensation and treatment of furnace gases, electrolytic refining processes.

Lead: Properties, effect of impurities, ores, roasting and reaction process, roasting and reduction process, precipitation processes, desilverization, refining.

Silver: Ores, roasting furnaces, fusion processes, amalgamating processes, wet processes, desilverization, cupellation, refining.

Gold: Ores, hand and machine hydraulic processes, stamp milling, parting processes, chlorination processes, cyanide process.

Zinc: Properties, ores, English, Belgian, and Silesian processes, refining and mechanical treatment.

Tin: Properties, ores, mechanical treatment, reverberatory- and shaft-furnace processes, refining.

Mercury: Properties, ores, treatment in Austria, Spain, and California.

Bismuth: Distillation process, refining.

Arsenic: Distillation process, refining.

Antimony: Processes, refining.

Nickel and Cobalt: Concentration, separation, refining.

Aluminium: Furnace and electrolytic processes.

Text books: E. D. Peter's, Jr., American methods of copper smelting; H. O. Hofman, lead smelting; T. Egleston, metallurgy of gold, silver, and mercury. 3 hours lectures and 1 hour review. Dr. EGLESTON and Mr. STRUTHERS

Required of the fourth-year students in the courses of Mining Engineering, Metallurgy, Geology, and Chemistry. Students in the course of Metallurgy in the School of Mines have one additional hour per week during entire year for review and supplementary work by Mr. Struthers.

IV—ADVANCED COURSE IN CALORIMETRY—Determination of practical and theoretical values of various combustibles. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON and Mr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course I.

V—ADVANCED COURSE IN PYROMETRY—Determination of temperatures of furnaces, gases from combustion. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON and Mr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course I.

VI—MICROSCOPIC STUDY OF IRON AND STEEL—Cutting, grinding, and preparing specimens and microscopic examinations of same. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON and Mr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course II.

VII—STUDIES OF THE SOLUBILITIES OF METALS AT HIGH PRESSURES—Chemical examination of the metals treated. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course I.

VIII—STUDIES OF THE PHYSICAL PROPERTIES OF METALS—Determination of hardness, heat, and electrical conductiveness under various circumstances. 2 hours instruction and 6 hours laboratory practice. Dr. EGLESTON

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course I.

Equipment

There is a lecture-room containing a large number of models of various furnaces, blowers, fans, heaps, stalls, lixiviation plants, Bessemer steel plant, and rolls, used in illustration of lectures, both primary and supplementary. A collection of 1200 large diagrams and 1200 lantern slides also used in lecture illustration, and a collection of ores, refractory materials for furnace construction, and fuels ; also used in lecture illustration.

The collections illustrating the department of Metallurgy include models of furnaces and a very large number of drawings and tracings, in most cases copies from the working drawings of establishments in actual operation. This collection embraces several hundred tracings collected from the best types of works in this country and abroad, many of them being sufficiently detailed to be used as construction drawings.

The metallurgical collection, properly speaking, embraces about 3000 specimens, illustrating every stage of many prominent metallurgical processes. Many of these specimens have been analyzed or assayed. They are open to the inspection of the students.

The metallurgical laboratory, in addition to a general equipment for analytical work, has a number of furnaces for heat investigations. There are collections of the various modern calorimeters, of calorimetric, optical, photometric, and thermo-electric pyrometers ; apparatus for analyzing furnace gases ; equipment for iron and steel sections ; lathes, grinders, polishers, and microscopes especially adapted for examination of opaque objects ; a collection of apparatus for obtaining direct pressure and pressures by the application of heat ; and a machine, constructed by Dr. Egleston, for the study of the physical properties of metals.

It is designed to make the lectures in both years as practical as possible, and for this purpose the economic details of cost are given whenever they can be obtained from authentic sources. Special attention is given to the ores of the United States, to ores which are difficult to treat, to the solution of practical problems which may occur, and to changes which different economic relations are liable to cause in the treatment of the same ore in different localities.

As an application of the lectures, the students in the course in Metallurgy in the School of Mines are required to work out a project, and to present working drawings and estimates for the erection of works to treat a given ore under stated conditions. The problems given are those which require solution in some parts of the United States.

Mining

HENRY S. MUNROE, E.M., Ph.D.....*Professor*
ROBERT PEELE, Jr., E.M.....*Adjunct Professor*
EDWARD B. DURHAM, E.M.....*Assistant*

Courses

I—Excavation and Tunnelling—Second year, first term. 3 hours. Professor Peele

Excavation of earth—tools and methods employed, support of excavations, special methods for quicksand and other water-bearing material; steam shovels and other mechanical excavators; handling and transportation of excavated material; tables of comparative costs. Dredging—description of machines and methods for canal, river, and harbor work; handling of dredged material; costs of dredging. Explosives—black powder, nitro-glycerine and its compounds, and other high explosives; their manufacture and use. Excavation of rock—hand and machine drills, methods of blasting, mammoth blasts, submarine blasting. Quarrying—plant and methods for quarrying different rocks. Tunnelling—methods of driving and timbering; handling and transportation of excavated material; drainage and ventilation of tunnels; submarine tunnels; permanent lining of tunnels; accidents in tunnelling; location of tunnels.

Required of second-year students in the courses of Mining Engineering, Civil Engineering, Metallurgy, and Geology.

II—Boring and Shaft-Sinking—Second year, second term. 2 hours. Professor Peele

Boring—methods and appliances for deep boring; cable tool or oil well method; boring with diamond drill, for prospecting and other purposes. Shaft sinking—methods and tools employed in soft material or in rock; special methods of sinking in water-bearing formations, quicksand; drainage of shafts; handling and hoisting of excavated material. Shaft timbering and other systems of lining employed in special cases.

Required of second-year students in the courses of Mining Engineering, Metallurgy, and Geology.

III—Exploration, Development, and Methods of Working—4 hours, third year, first term. Professor Munroe

Mineral deposits, characteristics of beds, masses, veins, and other deposits, and the irregularities and disturbances to which they are subject, as affecting the work of exploration and mining. Examination and survey of mineral properties; relation of topography to geological structure; construction of maps and sections; and tracing of probable outcrops as a guide to exploration. Magnetic surveys with dip compass. Prospecting by ditches, pits, and deep boring. Development; choice of methods; location of openings. Working of deposits and support of excavations; methods applicable to deposits of different thickness, inclination, and character. Coal mining; vein mining; working of thick deposits and soft-ore bodies. Salt mining. Support of special excavations. Surface workings.

Required of third-year students in the courses of Mining Engineering, Metallurgy, and Geology.

IV—Ore Dressing and the Mechanical Preparation of Coal—4 hours, third year, second term. Professor Munroe

The general principles and theory of dressing; preliminary operations; hand dressing; cleansing; crushing; jigging with and without preliminary sizing; slime concentration; and description of typical dressing works and coal-washing plants in this country and abroad.

Required of third-year students in the courses of Mining Engineering, Metallurgy, and Geology.

V—Ore-Dressing Laboratory—3 hours, fourth year, second term. Professor Munroe

During the second term of the fourth year a portion of the time assigned to ore-testing is devoted to the mechanical assaying of ores and coal by hand jigging and vanning.

Required of fourth-year students in the courses of Mining Engineering, Metallurgy, and Geology.

VI—Mine Engineering—2 hours first term and 1 hour second term, fourth year. Professor Munroe

Extraction; methods and machinery; handling mineral in working places; underground haulage. Surface handling and transportation; arrangements for loading and unloading cars and vessels, and for storing of minerals. Mineral railroads. Common roads. Drainage; sources of mine waters; methods for the control and raising of water; dams; drainage levels. Water supply. Ventilation; air of mines; mine gases; methods of ventilation; control and measurement of air currents. Accidents to men in shafts, levels, and working places; fire-damp and dust explosions; mine fires; inundations; rescue and relief of men.

Required of fourth-year students in the courses of Mining Engineering, Metallurgy, and Geology.

VII—Mine Plant—2 hours, fourth year. Professor Peele

Descriptions and critical discussion of the machinery employed in hoisting, drainage, and ventilation; air compressing plant; types of plant best adapted to different conditions; erection and care of machinery; accidents, breakage, and repairs.

Lectures are given also upon the design of timber, masonry, and iron constructions, head-frames, hoisting cages, ventilating fans, mine buildings, and other portions of mining plant.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

VIII—Design of Mine Plant—12 hours. Professor Peele

The students are assigned problems involving the design and construction of mine plant, in connection with the development of a mine. This work supplements the lectures on the design of mining machinery, involving reading and study, and the preparation of working drawings, bills of material, specifications, and estimates.

The work is done under constant supervision and advice in the draughting room.

Required of fourth-year students in Mining Engineering.

IX—Mine Surveying—1 hour, second term, second year. Mr. Durham

This course is introductory to the practical work in underground surveying in connection with the summer school in mining. It includes the general principles of underground surveying, the construction of mine maps and sections, the measurement of contracts, the location of lines for new work.

Required of second-year students in the courses of Mining Engineering, Metallurgy, and Geology.

X—Administration and Mine Accounts—1 hour, second term, fourth year. Professor Munroe

Administration, organization, and business management, mine accounts, and cost sheets. Examination and valuation of mines.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

Summer School

XI—The Summer School of Practical Mining is held in June and July, at some mine selected for the purpose, in the vacation between the third and fourth years, and lasts six weeks. Professor Peele and Assistant in Mining.

The course of instruction includes five weeks' detailed study of the plant and methods of working at some important mine or mines; practical mine surveying; excursions to other mines and mining regions, and geological work, surface and underground.

The course of study includes the subjects of shaft sinking, drifting, stopping, timbering, underground haulage, hoisting, mine drainage, ventilation, surface plant and machinery, mine buildings, shops, houses, water supply, drainage, organization, and administration. The students are divided into small squads, and assigned each day to a foreman, or working gang of miners, for the study of some definite subject. Each squad of students is visited several

times during the day by the instructor, who supplements the explanations of the miners, and indicates subjects demanding special study and observation. Manual labor, and the acquirement of manual dexterity by the student, are subordinated to the development of his powers of observation, and to the careful and critical study of the work going on about him, and the recording of his observations and study in notes and sketches taken on the spot. The students' note-books are examined and criticised each evening. By thus carefully systematizing and directing the work of the student his time is economized, and as much ground is covered in a week as would be in a month under ordinary circumstances, and the work is done more thoroughly.

This summer school has been in successful operation since 1877, and has proved itself an indispensable adjunct to the course of instruction. It bears the same relation to the study of mining as laboratory work to the study of chemistry or physics, or clinical instruction and hospital practice to the study of medicine.

In 1893 the summer school was held at the Mount Hope and Franklin iron mines, Morris Co., N. J., and at the collieries of Messrs. Coxe Bros. & Co., at Oneida, Schuylkill Co., Pa. A visit was made also to the large strippings of the mammoth vein at Hollywood and Latimer. The last week of the session was spent at the mining exhibit of the World's Fair, Chicago.

In 1894 the summer school was held at the Tamarack and Osceola copper mines, near Calumet, Michigan. After completing the regular work, visits were made to the smelting works at Hancock and Dollar Bay, to the Tamarack concentration mill, and to the Central mine. Finally, a sixth week was occupied with the Professor of Geology in surface geological work in the same region.

Required of students in the courses of Mining Engineering, Metallurgy, and Geology in the vacation between their third and fourth years.

Optional to the same students, if without conditions, in the vacation between their second and third years.

Note—Special courses, consisting of personal instruction, reading, and experimental investigation, will be arranged for advanced students according to their individual needs. These courses vary in difficulty and in the amount of time necessary, according as the student is a candidate for the degree of A.M. or Ph.D., and according as he pursues Mining as a major or a minor subject. The following are suggested:

XII—Coal Mining—2 hours.

XIII—Ore Mining—2 hours.

XIV—Coal Washing—1 hour.

XV—Ore Dressing—1 hour.

XVI—Examination of a Mineral Property, or a Mine—4 to 6 weeks devoted to field and underground work in the Summer School of Practical Mining, with conferences at convenience of professor.

XVII—Examination of a Coal-Washing Plant, or an Ore-Dressing Plant—4 to 6 weeks' work in the mill and in the laboratory, with conferences.

XVIII—Special Problems and Original Investigations in Ore Dressing and Mining as Assigned—With conferences, laboratory, and field work as required.

Equipment

Mining Museum—The subject of mining is illustrated by collections of mine maps, working drawings, diagrams, photographs, models, mining tools, mining machines, ores and products of dressing works, and surveying apparatus.

Maps of coal and metal mines of this and other countries. Working drawings, diagrams, and photographs of mine plant, and of mining and dressing

machinery. Models of mines; of shafts, tunnels, and galleries, illustrating methods of sinking, driving, timbering, tubbing, and walling. Models of deep boring apparatus, shaft head gear, hoisting engines, man engines, pumps, ventilators, safety cages, mine cars, crushers, stamps, ore washers, shaking tables, and other dressing machines. Mining tools and mining machines; picks, shovels, sledges, drills, blasting apparatus, lamps, safety lamps, anemometers, hand-power and machine drills. Ores and dressing products from Clausthal, Lake Superior, Missouri, and elsewhere. Surveying instruments, geological compasses and clinometers, attraction compasses, dipping needles, hanging compasses and arcs, transits, lamp signals, rods, and apparatus for plumbing and measuring shafts.

Owing to lack of room the greater part of these collections are not on exhibition at present.

Lecture Illustrations—The lectures on mining are illustrated by over 1600 blue prints from negatives made for the purpose. These prints are collected in scrap-books illustrating the different courses of lectures, and each student has the use of one of these books for reference during the lecture, and for home study. These blue prints have many advantages over the usual form of lecture illustrations by lantern slides or wall diagrams. The latter are, however, used when necessary to supplement the blue prints.

Ore-Dressing Laboratory—Contains crushing and concentrating machinery, and the necessary apparatus for sampling and testing ores.

Mines and Dressing Works—Numerous coal, iron, and other mines are easily accessible from New York in from one to four hours by rail. Magnetic iron mines in New York, New Jersey, and Pennsylvania; hematite mines in the same states, and in Connecticut; anthracite mines in Pennsylvania; zinc mines in New Jersey and Pennsylvania. Thus close to New York may be studied the best practice in mining under most varied conditions, and the most modern and effective mining and dressing machinery in the country. By going a little farther one may reach the bituminous coal regions and natural gas and oil fields in one direction, and the pyrites deposits of Vermont and Canada in the other: while the excursions of the summer class in mining extend as far as the copper and iron regions of Lake Superior, which can be reached at moderate cost by taking advantage of the steamers plying on the great lakes.

Neurology

M. Allen Starr, M.D. *Professor*
Frederick Peterson, M.D. *Chief of Clinic*
William H. Caswell, M.D. *Clinical Assistant*
Morton R. Peck, M.D. *Clinical Assistant*
Pearce Bailey, M.D. *Clinical Assistant*
Louis F. Bishop, M.D. *Clinical Assistant*
C. E. Atwood, M.D. *Clinical Assistant*
A. W. Ferris, M.D. *Clinical Assistant*
Lewis A. Connor, M.D. *Clinical Assistant*
H. S. Stebbins, M.D. *Clinical Assistant*
William B. Noyes, M.D. *Clinical Assistant*

Courses

I—The Diseases of the Mind and Nervous System—Didactic lectures. 1 hour for five months ; and 6 demonstrations, illustrated with the magic lantern, of the pathology of nervous diseases. Professor Starr

Required in the second and third years, of candidates for the degree of M.D.

II—Clinical Lectures at the Vanderbilt Clinic—At these clinics all forms of nervous disease, including insanity, are demonstrated. During the months of didactic instruction the clinics are so arranged as to illustrate the clinical side of the subject lectured upon. 1 hour. F. at 2 P.M. Professor Starr

Required, in the second and third years, of candidates for the degree of M.D.

III—Practical Instruction in Neurology—"Section teaching," by the Chief of Clinic, at which a division of ten students is taught the practical examination of nervous patients, including electro-diagnosis and electro-therapeutics. 6 lessons for each student at the Vanderbilt Clinic. Dr. Peterson

Optional, in the third year, for candidates for the degree of M.D.

IV—Insanity—10 clinics at the Ward's Island Insane Asylum. Dr. Peterson

Optional, in the second and third years, for candidates for the degree of M.D.

Obstetrics

James W. McLane, M.D.....*Professor*
Ervin A. Tucker, M.D.....*Instructor*

Courses

I—Theory and Practice of Obstetrics—Lectures, 3 hours from October 1 to March 15. Professor McLane

Required, in the second and third years, of candidates for the degree of M.D.

II—Practical Instruction at the Sloane Maternity Hospital—Members of the graduating class in medicine are required each to attend at this hospital a certain number of cases of labor. For this purpose the students of the third year are divided, at the beginning of the academic year, into sections of eight, each section remaining on duty for one week. During this time they are furnished with lodgings, free of charge, on the grounds of the Medical School. Their rooms are connected with the hospital by electric wires, so that they may be summoned quickly to cases of emergency. Daily bedside instruction is given by the Instructor, who is the Resident Physician at the Sloane Hospital, and an examination on the work of the week is held there by him every Saturday. A daily clinical lecture is also given at the hospital, and instruction upon the manikin. Dr. Tucker

The Sloane Maternity Hospital

(See table of contents.)

This is upon the grounds of the College of Physicians and Surgeons, and the service of the hospital is under the exclusive direction of the Professor of Obstetrics, the Instructor being also the Resident Physician, as above stated.

The number of deliveries averages over eight hundred a year. These, with the obstetric operations, and the subsequent treatment of women and infants, afford invaluable bedside experience, such as is offered at no other medical school in this country.

Ophthalmology

HERMAN KNAPP, M.D. *Professor*
CHARLES H. MAY, M.D. ... *Chief of Clinic and Instructor in Ophthalmoscopy*
JOHN HERBERT CLAIBORNE, M.D., *Clinical Assistant and Instructor in Refraction and Motility*
WARD A. HOLDEN, M.D. *Clinical Assistant*
HENRY H. TYSON, M.D. *Clinical Assistant*
JACKSON M. MILLS, M.D. *Clinical Assistant*
EDWARD B. COBURN, M.D. *Clinical Assistant*

Courses

I—CLINICAL LECTURES, AT THE VANDERBILT CLINIC, UPON THE DISEASES OF THE EYE.—In selected cases the diagnosis is made, treatment is applied, and operations are performed before the class.

After the lectures, as opportunity offers, microscopic demonstrations of the pathological histology of the eye are made by Dr. Holden. 1 hour throughout the academic year. Tu. at 3 P.M. Professor KNAPP

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION, AT THE VANDERBILT CLINIC, IN THE USE OF THE OPHTHALMOSCOPE—6 lessons for each student. Dr. MAY

Optional, in the third year, for candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION, AT THE VANDERBILT CLINIC, IN THE REFRACTION AND MOTILITY OF THE EYE—6 lessons for each student. Dr. CLAIBORNE

Optional, in the third year, for candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN THE DISEASES AND THE OPERATIVE SURGERY OF THE EYE AT THE NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 44 and 46 East 12th Street. Sat. at 2:30 P.M. throughout the academic year. To these clinics the students are invited in sections. Professor KNAPP

Optional, in the third year, for candidates for the degree of M.D.

Oriental Languages

EDWARD DELAVAN PERRY, Ph.D. *Professor of Sanskrit*
RICHARD J. H. GOTTHEIL, Ph.D. *Professor of Rabbinical Literature and the Semitic Languages*
A. V. WILLIAMS JACKSON, A.M., Ph.D. *Adjunct Professor of English, Instructor in the Iranian Languages*

Courses designated by an *a* are open to the public, men and women alike, on payment of an auditor's fee.

SANSKRIT—Professor PERRY

General Statement

The courses of instruction in the department of Sanskrit are intended to be introductory to the study of Comparative Philology, and of the History of Religions, as well as to the study of the History, Antiquities, and Literature of India. To a knowledge of these at first hand an acquaintance with Sanskrit is indispensable; and this is not very difficult for any one to acquire who has a good knowledge of Latin and Greek, and is willing to work hard at first.

The Elementary Course (Sanskrit I), open to all university students, is designed to give a thorough practical acquaintance with the commoner grammatical forms of the "classical" Sanskrit, and a considerable facility in reading. It may be taken, as an optional study, not counting among the electives, by juniors in the School of Arts. This course may be profitably pursued in connection with almost any branch of linguistic study, particularly by those who intend to become teachers of language.

In Course II, open only to students who have already taken Course I or its practical equivalent, somewhat more difficult extracts from the classical Sanskrit literature will be taken up during the first half-year. An introduction to the study of the Vedic or pre-classical language and literature will be given in the second term.

Course III is intended to give an elementary knowledge of Pālī, an offshoot of Sanskrit, and the language of the sacred books of the Southern Buddhists (Ceylon, etc.). The grammar is simpler than that of Sanskrit, and offers few or no difficulties to one who has a fair knowledge of the latter.

Courses I and IV are open to seniors and university students; Courses II and III to advanced students only.

Courses

a I—SANSKRIT, ELEMENTARY COURSE—Perry's *Sanskrit Primer*, Lanman's *Reader*, Whitney's *Grammar*. Professors JACKSON and PERRY

a II—SANSKRIT, ADVANCED COURSE—First term: Boehtlingk's *Sanskrit-Chrestomathie*. Second term: Introduction to the Study of the Veda, Lanman's *Reader*. 2 hours. Professors PERRY and JACKSON

a III—PĀLĪ, ELEMENTARY COURSE—First term only. Professor PERRY

Hour to be arranged. This course, to be given if two or more students apply, may be continued throughout the year.

a IV—INTRODUCTION TO THE STUDY OF PHONETICS—Second term only. Professor PERRY

Not given in 1894–5.

SEMITIC LANGUAGES—Professor GOTTHEIL

Courses in Hebrew

The course in Hebrew extends over three years. The first year is devoted to the study of the elements; the second to the study of the syntax and the acquiring of ease in translating from Hebrew into English and from English into Hebrew; the third to a critical study of one or more books of the Bible.

The attention of students in the School of Arts is directed to the fact that it is desirable that those who intend entering a theological seminary after graduation shall have had at least two years' previous training in Hebrew. Opportunity for this training is given the students of Columbia College, Hebrew being an elective in both the junior and senior classes.

a I—Biblical Hebrew, Elementary Course—Harper's *Hebrew Method* and *Manual;* Harper's *Elements of Hebrew;* both published by Scribners, New York. 2 hours. Professor Gottheil

Open to juniors, seniors, and university students.

a II—Biblical Hebrew, Second Course—Rapid reading of the Book of Deuteronomy in connection with Gesenius' *Hebräische Grammatik* (25th ed.) and Driver's *Hebrew Tenses* (3d ed.). 2 hours. Professor Gottheil

Open to seniors and university students.

a III—Biblical Hebrew, Third Course—Critical study of the Book of Hosea, with special reference to the ancient versions. Besides the books mentioned in Course II, the student must provide himself with a copy of the Septuagint, and with either Gesenius' *Hebräisches und Aramäisches Handwörterbuch* (10th ed.), 1886, or Siegfried and Stade's *Hebräisches Wörterbuch*, 1893. 2 hours. Professor Gottheil

Open to advanced students only.

For other courses in Biblical Hebrew see below.

a IV—Rabbinical Hebrew—Mediæval Hebrew Poetry, in connection with the interpretation of the *Divan* of Juda Hallevi. 1 hour. Professor Gottheil

Open to seniors and university students.

a V—Rabbinical Hebrew—Interpretation of the Commentary of David Kimchi on the Psalms. 1 hour. Professor Gottheil

Open to seniors and university students.

For Courses IV and V a previous knowledge of Biblical Hebrew is demanded.

Course in Epigraphy

a VI—Interpretation of the Hebræo-Aramæan Inscriptions of Sinjirli (*Mittheilungen aus den orientalischen Sammlungen*, Heft xi, Berlin, 1893) and of the Aramæan Inscriptions in the *Corpus Inscriptionum Semiticarum*, Vol. II. 1 hour. Professor Gottheil

For Course VI, which is open to advanced students only, a previous knowledge of Hebrew and Aramæan is demanded.

Course in Assyrian

a VII—Assyrian, Second Course—The Babylonian Accounts of the Creation and the Flood (Paul Haupt, *Das Babylonische Nimrodepos*, and Fr. Delitzsch, *Assyrische Lesestücke*, 3d ed.). 2 hours. Professor Gottheil

Only those students may take this course who have previously taken the first course in Assyrian or done an equivalent amount of work. For other courses in Assyrian see below.

Courses in Arabic

a VIII—Arabic, Second Course—Derenbourg and Spiro, *Chrestomathie élémentaire de l'Arabe Littéral* (2d ed.), Paris, 1892. 2 hours. Professor Gottheil

Open to advanced students only.

a IX—Arabic, Third Course—First term, Interpretation of the *Mufassal* of al-Zamachshari, ed. Broch (2d ed.), 1879. Second term, rapid reading of Ahlwardt's *Elfachri*, Gotha, 1860. 2 hours. Professor Gottheil

Open to advanced students only.

Course in Syriac

a X—Syriac, First Course—First term, Nöldeke's *Syrische Grammatik*, in connection with selected readings in the Peshitta. Second term, Interpretation of Cureton's *Spicilegium Syriacum*, London, 1855. 2 hours. Professor Gottheil

Open to seniors and university students.

For course in Biblical Aramaic see below.

Semitic Seminar

a XI—The Egyptian Dialect of Modern Arabic, in connection with Spitta's *Grammatik des Arabischen Vulgär-dialektes von Ægypten* (Leipzig, 1880) and *Contes Arabes Modernes* (Leyden, 1883). The following works will also be necessary: Mehaïl Sabbâg's *Grammatik der Arabischen Umgangssprache in Syrien und Ægypten*, edited by H. Thorbecke (Strassburg, 1886; Vollers' *Lehrbuch der Ægypto-Arabischen Umgangssprache*, Kairo, 1890; Max Van Berchem, *Conte Arabe en dialecte Égyptien* (Paris, Impr. Nationale, 1889). Tu. evening at 8. Professor Gottheil

Only advanced students who have taken Arabic for two years will be admitted to the Seminar.

Courses in Semitic Languages at the Union Theological Seminary

The following courses (possibly subject to some modifications), to be given in 1894–5 at the Union Theological Seminary, 700 Park Avenue, are open to university students in Columbia College, and may count as part of the work offered for the degrees of Master of Arts and Doctor of Philosophy.

I—Biblical Hebrew, Elementary Course—Davidson, Introductory Hebrew grammar. 5 hours. Mr. Fagnani

II—Biblical Hebrew—Translation of Hebrew and higher Hebrew Grammar. 2 hours, first term. Professor F. Brown

III—Biblical Hebrew—Exercises in Hebrew Etymology and Syntax, with sight-reading. 1 hour, second term. Mr. Fagnani

IV—Biblical Hebrew—Selections from the Pentateuch, with Exegesis. 2 hours, second term. Mr. Fagnani

V—Biblical Hebrew—Readings in the unpointed Hebrew text. 1 hour, first term. Professor F. Brown

VI—Biblical Hebrew—Exposition of the later historical books of the Old Testament, with especial reference to their illustration from Assyrian and Babylonian history. 2 hours, second term. Professor F. Brown

VII—Biblical Hebrew—Critical exercises in the Hebrew text. 2 hours, second term. Professor F. Brown

VIII—Biblical Hebrew—Exposition of select chapters of the Old Testament. 5 hours during December. Mr. Fagnani

IX—Biblical Hebrew—The Hebrew text of Isaiah. 2 hours, first term. Professor F. Brown

X—Hebrew Poetry—The Psalms. 2 hours, first term. Professor F. Brown

XI—Hebrew Poetry—Selections from the earliest Biblical Poetry. 3 hours, second term. Professor F. Brown

XII—Biblical Literature—Lectures on the canon, text, and literature of the Old Testament. 2 hours. Professor Briggs

XIII—Biblical Psychology. 2 hours. Professor Briggs

XIV—General Introduction to the Study of the Bible. 2 hours, first term. Professor Briggs

XV—Biblical Aramaic—Dan. ii., 4—vii., 28 (text of Baer and Delitzsch); Kautzsch, *Grammatik des Biblisch-Aramäischen*. 1 hour, second term. Mr. Fagnani

XVI—Arabic—During the first half-year the grammar, with selections from the version of Saadia. Second term: Arabic Syntax, with readings from the Koran. 1 hour. Professor F. Brown

XVII—Assyrian, First Course—The Assyrian characters and grammar, with selections from the historical inscriptions. 1 hour, second term. Professor F. Brown

XVIII—Assyrian, Second Course—Selections from historical and mythological inscriptions and syllabaries. 1 hour. Professor F. Brown.

IRANIAN LANGUAGES—Professor Jackson

Courses I, III, and IV are open to all seniors and university students; Courses II and V to advanced students only.

Courses

I—Avestan, Elementary Course—Grammar and reading of texts. 2 hours. Professors Perry and Jackson

The first term will be devoted to acquiring a knowledge of the grammar, constant reference being made to the corresponding forms in Sanskrit. The second term will be spent in reading selections from the Avesta, attention being paid to the laws for the metrical construction of the text wherever possible. Text-book: Jackson's *Avesta Series:* Part i, *Grammar;* Part ii, *Texts.*

II—Avestan, Advanced Course—Study of the grammar, interpretation of texts; antiquities and literature. 2 hours.

This course will provide for a more extended study of the Avesta, chiefly according to the "comparative" method, not neglecting, however, the so-called "traditional school" of interpretation. Special time will be spent on the Gāthās. Geldner's edition of the Avesta-text will be used.

III—Old Persian Cuneiform Inscriptions—1 hour, first term.

This course is to run parallel with the advanced Avestan. Text-book: Spiegel's *Die Altperischen Keilinschriften*; Bartholomae's *Handbuch der Altiranischen Dialekte* will also be needed.

IV—Pahlavi, Introductory Course—1 hour, second term.

An introduction into this language will be given in connection wtth the second course; and a number of Avestan selections with the Pahlavi translations will be studied side by side. Text-book: C. de Harlez' *Manuel du Pehlevi.*

V—Zoroaster and his Teaching—1 hour.

VI—Comparative Iranian Grammar—1 hour, second term. Professor Jackson

Course in Modern Persian

The Principles of the Grammar—With selected readings, in connection with Salemann and Shukovski's *Persische Grammatik*, Berlin, 1889 (*Porta Linguarum Orientalium*, Pars xii.), first term. Interpretation of Sadi's Gulistan, second term. 2 hours. Professor Jackson and Mr. Yohannan

Course in Armenian

Principles of the Grammar with Selected Readings—1 hour, second term. Mr. Yohannan

Course in Turkish

Principles of the Grammar—A. Müller's *Türkische Grammatik* (*Porta Linguarum Orientalium*, Pars xi), first term. Exercises in Turkish Conversation and in the reading of Turkish newspapers, second term. 2 hours. Mr. Yohannan

Study of Language

I—Introduction to the Study of Language—2 hours. Professors Jackson and Gottheil

Open to all university students, and to juniors in the School of Arts.

By agreement between Professors Carpenter, Gottheil, Jackson, and Perry, a course of 2 hours weekly, consisting of lectures and exercises, will be offered in each year under the foregoing title. This course is designed to serve as a preparation for advanced studies in any field of linguistic research, and will, it is believed, prove of great value to all university students who look forward to such investigations. It will be the object of the instructor to illustrate, from the points of view of the psychologist and of the phonetician respectively, the conditions of the existence of language, both as a psychical and as a physical product, and the laws which regulate its differentiation, decay, and growth. The course will be taken with most profit by those who have had a good preliminary training in psychology and in the elements of phonetics.

Otology

Albert H. Buck, M.D.....*Clinical Professor*
William Cowen, M.D.....*Chief of Clinic*
Robert Lewis, Jr., M.D.....*Clinical Assistant*
E. A. Keily, M.D.....*Clinical Assistant*
A. G. Terrell, M.D.....*Clinical Assistant*

Courses

I—Practical Instruction in the Diagnosis and Treatment of the Diseases of the Ear, at the Vanderbilt Clinic—6 lessons for each student. Professor Buck and Dr. Cowen

Optional, in the third year, for candidates for the degree of M.D.

Department of Pathology

T. Mitchell Prudden, M.D. *Professor*
George C. Freeborn, M.D. *Instructor in Normal Histology*
Timothy Matlock Cheesman, M.D. *Instructor in Bacteriology*
Ira Van Gieson, M.D. *Instructor in Normal Histology and Alonzo Clark Scholar*
Eugene Hodenpyl, M.D. *Instructor in Pathology*
John Slade Ely, M.D. *Assistant in Pathology and Curator of the Museum of Pathology*
James Ewing, M.D. *Tutor in Normal Histology*
Henry Power, M.D. *Assistant in Normal Histology*
Edward M. Kitchel, M.D. *Assistant in Normal Histology*
Pearce Bailey, M.D. *Assistant in Pathology*
Edward Leaming, M.D. *Assistant in Photography*
William Stephen Stone, M.D. *Alumni Association Fellow in Pathology*

General Statement

For convenience of administration, and for the better association of allied themes, the laboratories of Pathology, Normal Histology, Bacteriology, and Photography are grouped together in the Department of Pathology under the direction of the Professor of Pathology.

Courses in Pathology

I—Practical Instruction in Pathological Anatomy and Histology, and in Bacteriology as applied to Medicine, is given in the large laboratory on the top floor of the north wing of the Medical School. Each student is given about one hundred sections or other permanent preparations, illustrating the more important and common lesions. These he mounts for the microscope, and studies, making notes and sketches. This collectiou of specimens he retains for future reference.

Demonstrations of gross pathological specimens are made as the material is gathered, and the members of the class may attend the autopsies held at the Roosevelt and Bellevue Hospitals.

The systematic course opens with a study of the various phases of inflammation: tumors are next studied. The methods of staining, examining, and cultivating bacteria and other micro-organisms are then illustrated, and the student himself prepares, stains, and studies most of the more important pathogenic germs. The remainder of the course is devoted to the systematic study of the lesions of the viscera. Each student is furnished with a microscope and the necessary instruments and reagents. Delafield and Prudden's Handbook of Pathological Anatomy and Histology is used as a text-book in this course. 6 hours, 1 term. Professor Prudden and Drs. Hodenpyl, Ely, Cheesman, and Bailey

Required, in the third year, of candidates for the degree of M.D.

II—Pathological Anatomy and Histology, Experimental Pathology, and Applied Bacteriology—A limited number of graduates in medicine, or other advanced workers, is admitted to the special laboratories for the pursuit of advanced lines of study in these themes. Professor Prudden, Drs. Hodenpyl, Cheesman, Freeborn, and Van Gieson

Courses in Normal Histology

I—Practical Instruction in the Large Laboratory, which occupies the entire upper floor of the north wing of the College of Physicians and Surgeons. Sections and other preparations of the more important structures and organs of the normal body (except the organs of generation, of the special senses, and of the central nervous system, which are studied during the second year) are given to each student during the course. These specimens, about one hundred in number, he is required to mount and study under the microscope, making notes and drawings of the entire series. This collection he retains for future reference. Each student is supplied with a microscope and with a tray of instruments and reagents. Piersol's Text-Book of Normal Histology is used in this course. 6 hours, 1 term. Drs. Freeborn, Van Gieson, Ewing, Power, and Kitchel

Required, in the first year, of candidates for the degree of M.D.
Elective for seniors in the School of Arts.

II—Practical Instruction in Advanced Normal Histology is given to a limited number of graduates in medicine, or other qualified workers in the special laboratory on the second floor of the north wing of the Medical School. Drs. Freeborn and Van Gieson

Courses in Bacteriology

For required instruction for medical students in bacteriology as applied to medicine, see Pathology I.

For optional instruction in the same for advanced workers, see Pathology II.

I—Laboratory Course—There is opportunity each year for a few graduates in medicine or other qualified workers, to receive special courses in practical elementary bacteriology. The laboratory is abundantly supplied with apparatus for the culture and study of micro-organisms, and has under cultivation a large collection of identified species. In these courses the special applications of bacteriology to practical medicine are held in view. They require attendance at the laboratory during the entire day for six weeks. Dr. Cheesman

II—Laboratory Course—Methods of preparation, staining, microscopic study and measurement of bacteria. Preparation of culture media; study and record of observations, of selected typical species; systematic analyses for determination of unknown species; methods of isolation of species; qualitative and quantitative biological examinations of water, soil, and air; methods of determining pathogenic properties, disinfection, modes of testing value of germicides. Text-books: Abbott's Principles of Bacteriology, and Sternberg's Bacteriology. Dr. Cheesman

Open to candidates for the degree of A.M. or of Ph.D. whose minor subject is Bacteriology.

III—Laboratory Course—As under Course II, with additional study and determination of known species of bacteria; special study of the chemical products eliminated in the growth of bacteria, and the pursuit of some selected theme for original investigation. Professor Prudden and Dr. Cheesman

Open to candidates for the degree of A.M. or of Ph.D. whose major subject is Bacteriology.

Research

Research in pathology and in bacteriology may be pursued in the laboratories of this department by a limited number of graduate students or practitioners of medicine or other advanced workers under the direction of the professor. To such men the large collection of pathological specimens preserved for microscopical study, and the collection of bacterial cultures belonging to this department, are accessible. Professor Prudden

Fellowships

For University and Alumni Association Fellowships, open to persons wishing to do special work under the Professor of Pathology, see pages 18 and 21.

Museum

The museum of pathology is made use of in the work of this department, both for the instruction of medical students, and as a place of deposit for specimens showing new or rare forms of lesions.

Photography

Facilities for gross photography of cases or of specimens, and for photomicrography, in charge of Dr. Leaming, have been recently provided in connection with this department. These facilities may be made use of by other departments also. They are largely drawn upon in recording the results of special forms of research in pathology and bacteriology.

Philosophy and Education

Nicholas Murray Butler, Ph.D.....*Professor*
James McKeen Cattell, Ph.D.....*Professor*
James Hervey Hyslop, Ph.D.....*Instructor*
Livingston Farrand, A.M., M.D.....*Instructor*
Norman Wilde, Ph.D.....*Assistant*
Henry Rutgers Marshall, A.M.....*Lecturer*
Walter Lowrie Hervey, Ph.D.....*Professor in the Teachers College*
John Francis Woodhull, A.B.....*Professor in the Teachers College*
Charles Alpheus Bennett, B.S.....*Professor in the Teachers College*
John Franklin Reigart, A.B.....*Professor in the Teachers College*
Clarence Edmund Meleney, A.M.....*Professor in the Teachers College*
Frank Thomas Baker, A.M.....*Professor in the Teachers College*

General Statement

The courses of this department fall into two divisions, those on Philosophy and those on Education. In each division are courses intended primarily for

undergraduates. These are best described as introductory courses, and their aim is to furnish a general acquaintance with the main subdivisions of philosophy and education as a whole. The courses known as Philosophy A, II, III, IX, XIII, and Education I and II, are of this character. By the use of the historical and comparative methods of study and exposition, students in these courses are introduced to a general survey of their respective subjects. While serving therefore as introductory courses for students proposing to specialize in philosophy and education, they are particularly recommended to those students of law, medicine, political science, natural science, or theology, who wish to acquire some knowledge of philosophy and education as part of a liberal education.

Philosophy A is required of all members of the junior class in the School of Arts; Philosophy II, III, IX, XII, XIII, Education I and II, are open to seniors in the School of Arts and other candidates for the degree of A.B.

The remaining courses in each division are intended primarily for advanced students. These courses may only be taken by those who have had the introductory courses, or their equivalent, at some other university. The advanced courses are planned with reference to each other, and a student remaining three years in the department may hear courses that cover the entire range of modern philosophy.

A select number of advanced students, usually candidates for university degrees only, are admitted to the seminaries organized for training in research.

Courses in Philosophy

A (I)—Logic and Psychology—Hyslop's Elements of Logic; Baldwin's Elements of Psychology, James's Principles of Psychology. Lectures, practical exercises, and recitations. 2 hours. Dr. Hyslop and Dr. Wilde

II—Ethics, Introductory Course—Lectures, essays, and discussions. 2 hours. Dr. Hyslop and Dr. Wilde

III—General History of Philosophy—Zeller's Outlines of Greek Philosophy, Falckenberg's History of Modern Philosophy, and Windelband's History of Philosophy. Lectures, essays, and private reading. 2 hours. Professor Butler and Dr. Wilde

IV—British Philosophy from Locke to Herbert Spencer—History and criticism of the Association psychology and the philosophy of evolution. Locke's Essay on the Human Understanding, Berkeley's Principles of Human Knowledge, Hume's Treatise on Human Nature; the writings of Hartley, Brown, the Mills, and Bain; Herbert Spencer's First Principles. Lectures, essays, and private reading. 2 hours. Professor Butler

[Given in 1894–5, and each alternate year thereafter.]

V—The Philosophy of Kant and his Successors—Fichte, Schelling, Hegel, Herbart, and Schopenhauer. Lectures, essays, and private reading. 2 hours. Professor Butler

[Given in 1893–4, and each alternate year thereafter.]

VI—Systematic Ethics—Lectures, discussions, and essays. 2 hours. Dr. Hyslop

[Given in 1894–5, and each alternate year thereafter.]

VII—Practical Ethics—Lectures, private reading, observation, essays, and discussions. 2 hours. Dr. Hyslop

[Given in 1893–4, and each alternate year thereafter.]

VIII—Contemporary Psychologists—Lectures and readings from the works of Wundt, Volkmann, Ribot, Münsterberg, James, and Baldwin, with particular attention to their doctrines of apperception and of the feelings. 1 hour, March, April, and May. Professor Butler

[Not given in 1894–5.]

IX—Physiological Psychology, Introductory Course—Lectures and laboratory work. 3 hours. Psychological laboratory. Dr. Farrand

X—Physiological Psychology, Advanced Course—Lectures and laboratory work. 2 hours. Psychological laboratory. Dr. Farrand

XI—Mental Pathology; Abnormal and Comparative Psychology—Lectures, essays, and discussions. 1 hour. Psychological laboratory. Dr. Farrand

XII—Anthropology—Lectures, essays, and private reading. 2 hours. Psychological laboratory. Dr. Farrand

XIII—Experimental Psychology, Introductory Course—Lectures, themes, and laboratory work. 2 hours. Psychological laboratory. Professor Cattell

XIV—Experimental Psychology, Advanced Course—Laboratory work. 2 hours. Professor Cattell

XV—Vision—Lectures, laboratory work, and reports. 2 hours. Psychological laboratory. Professor Cattell

XVI—Research Work in Experimental Psychology—Daily. Psychological laboratory. Professor Cattell

XVII—Philosophical Seminar—Weekly. Professor Butler

XVIII—Ethical Seminar—Weekly. Dr. Hyslop

Courses in Education

I—History of Educational Theories and Institutions: Aristotle and the ancient educational ideals, Alcuin and the rise of the Christian schools, Abelard and the foundation of the universities, Loyola and the educational system of the Jesuits; the educational reformers, Rousseau, Pestalozzi, and Froebel; Herbart and the philosophical study of education—Lectures, essays, and private reading. 1 hour. Professor Butler

II—Principles of Education; psychology of childhood, didactics, the ethical and religious element in education—Lectures, essays and private reading. 1 hour. Professor Butler

III—Educational Seminar—1 hour. Professor Butler

Courses at the Teachers College

The following courses are given at the Teachers College, W. 120th St., Morningside Heights:

IV—Educational Psychology : study of children—Lectures, observations, reports, and private reading. 2 hours. Professor Reigart

V—Methods of Teaching in the Elementary School—Lectures, observations, and practical exercises. 1½ hours. Professor Meleney

VI—History of Education, Introductory Course—Critical reading of educational classics—Lectures, essays, and discussions. 1 hour. Professor Reigart

VII—Institutes of Education ; Laurie's Institutes of Education, Rosenkrand's Philosophy of Education, and Herbart's Science of Education—Lectures, essays, and private reading. 1 hour. Professor Hervey

VIII—Methods of Teaching English in Secondary Schools—The study of literature ; methods of teaching English composition and the formation of good style. Lectures, essays, and practical exercises. 2 hours, second term. Professor Baker

IX—Methods of Teaching History in Secondary Schools—2 hours first term. Lectures. Miss Lucy M. Salmon, Professor of History in Vassar College

X—Methods of Teaching Science in Elementary and Secondary Schools—Lectures, essays, and practical exercises. 3 hours. Professor Woodhull

XI—Methods of Teaching Manual Training in Elementary and Secondary Schools—Lectures, essays, and practical exercises. 4 hours. Professor Bennett

XII—Methods of Teaching Latin and Greek—Lectures, essays and practical exercises. 1 hour. Professor Arrowsmith

XIII—Methods of Teaching French and German—Lectures, essays, and practical exercises. 1 hour. Professor ——

XIV—Reading and Discussion of German and French Works on Education in the Original Text—Lectures, essays, and discussions. 2 hours. Professor ——

XV—Methods of Teaching Educational Psychology—Lectures, essays, observation, and practical exercises. 2 hours. Professor Reigart

XVI—Practice in Teaching and School Supervision—Lectures, reports, and practical exercises. 3 hours. Professor Meleney

Equipment

The equipment of the department is very complete and constantly being added to. It includes library facilities, laboratories of experimental and physiological psychology, the Horace Mann School for observation and practice, and the beginnings of an educational museum.

Every journal of importance, American and foreign, dealing with philosophy, psychology, ethics, or education, is taken regularly by the College library. Any book needed by an advanced student can usually be bought at once.

Students of Education have also at their disposal the Bryson Library at the

Teachers College, W. 120th St., Morningside Heights. The collection now numbers more than 5000 volumes, and is constantly being added to. The main purpose of the library is to afford special students of Education opportunities for study and research.

The psychological laboratory is situated on the fourth floor of the building known as the President's House, and consists of a lecture-room and general laboratory and three smaller rooms for special research, including a dark room for work on vision. The small rooms allow students to work alone and without interruption at all hours during the day. The laboratory has windows to the north, east, south, and west, and is supplied with electric light for experimental purposes and electric power.

The collection of psychological apparatus is, perhaps, not surpassed by any in this country or in Europe. Three thousand five hundred dollars have recently been appropriated for this collection by the Trustees of the College, and, in addition, apparatus which cost $1200 is in use. The apparatus has been secured with a view to a series of experiments, such as is carried out by the students attending the introductory course, and with a view to special researches.

The exceptionally fine collection of apparatus belonging to the department of Physiology is also available for the use of students in this department.

For students of Education an opportunity for observation and practice in teaching is afforded that is quite unique either in this country or in Europe. This is given in the school of observation and practice known as the Horace Mann School, which is maintained by the Teachers College for this purpose. In this school every phase of school work, including the high school as well as the kindergarten and the elementary school, is to be found in operation Opportunities for practice in teaching and supervision are afforded to qualified students.

Physics

OGDEN N. ROOD, A.M. *Professor*
WILLIAM HALLOCK, A.B., Ph.D. *Adjunct Professor*
HOLBROOK CUSHMAN, A.B. *Instructor*
REGINALD GORDON, A.B. *Tutor*
HERSCHELL C. PARKER, Ph.B. *Tutor*
ASA S. IGLEHART, A.B. *Assistant*
CHARLES C. TROWBRIDGE, B.S. *Assistant*
HENRY S. CURTIS, A.B. *Assistant*
HERBERT T. WADE, A.B. *Assistant*

Courses

I—GENERAL PHYSICS—Sound and Heat (First Term). Light and Electricity (Second Term). 3 hours lectures and recitations. Professor ROOD and Mr. GORDON

Required of all first-year students in the School of Mines. Open to seniors, School of Arts.

II—Sound (First Term)—Magnetism and Electricity (Second Term)—2 hours lectures, 2 or 6 hours laboratory work. Text-books: Atkinson's Ganot and Stewart and Gee's Physics. Professor Rood

Open to juniors and seniors School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics.

III—Electricity (First Term)—Lectures on absolute system of mechanical and electrical units; electrical measurements; the derivation and use of the Ampere, Volt, Ohm, Watt and Joule.

Exact Electrical Measurements (Second Term)—Lectures on the Farad, Coulomb, and units of electric and magnetic induction; electrical and magnetic measurements in the laboratory. 2 hours lectures, 8 hours laboratory. Text-books: Everett's, C. G. S., System of Units, Glazebrook and Shaw's Physics, Kohlrausch's Physical Measurements, Wiedemann and Eberts' Physics, and A. Witz's Physics. Professor Hallock

Required of second-year students in the Electrical Engineering course. Second-year students in all courses in the School of Mines except Architecture are required to attend the lectures of the first term, and to take 2 hours of laboratory work during both terms. Open to seniors School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics. Pre-requisite: I or II with 2 hours laboratory work.

IV—Light (First Term)—Lectures on the velocity, reflection, refraction, and dispersion of light. Achromatism, optical instruments, the eye, and Young's theory of color. Physical measurements in the laboratory.

Heat (Second Term)—Lectures on the expansion of solids, liquids, and gases; on conduction, specific heat, tension of vapors, and radiant heat. Physical measurements in the laboratory. 3 hours lectures, 2 or 4 hours laboratory. Text-books: Stewart and Gee, and Glazebrook and Shaw's Physics. Professor Rood

Open to seniors School of Arts, and to candidates for the degree of A.M. whose minor subject is Physics.

V—Physical Manipulation (First Term)—1 hour. Mr. Cushman

Open to juniors, seniors, School of Arts, to second-year students School of Mines, and to university students. Pre-requisite or parallel: Course II, III or IV.

VI—Study of Precision of Measurements (Second Term)—2 hours. Mr. Cushman

Open to seniors School of Arts, second-year students School of Mines, and to university students. Pre-requisite or parallel: Course III or IV.

VII—Theoretical Comparison of Electrical Methods (First Term)—2 hours. Mr. Parker

Open to candidates for the degree of Electrical Engineering, to seniors and university students. Pre-requisite or parallel: III or IV.

VIII—Undulatory Theory of Light (Second Term)—2 hours lectures. Professor Hallock

Open to seniors and university students. Pre-requisite or parallel: Course IV of 7 hours.

Laboratory Courses

IX—Electromotive force of Standard and Constant Cells.

X—Study of Strength of Electric Currents.

XI—Study of Elasticity of Solid Bodies.

XII—Colorimetry, and Absorption Spectra.

XIII—Photometry.

Open, with 5 hours laboratory work, to candidates for the degree of A.M., or, with 8 hours laboratory work, to candidates for the degree of Ph.D., whose minor subject is Physics. Pre-requisite: Course II of 4 hours.

XIV—Calibration of Wheatstone Bridges.

XV—Hypsometry.

XVI—Determination of Index of Refraction by Special Methods.

XVII—Quantitative Examination of the Discharge of the Induction Coil.

XVIII—Viscosity of Solids.

Open to candidates for the degree of A.M., or, with 10 hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: Courses II and IV of 8 and 7 hours.

XIX—Galvanometer Construction for Maximum Efficiency.

XX—Advanced Course in Spectrometry.

XXI—Ballistic-Galvanometer Work, Inductance.

XXII—Calorimetry.

XXIII—Radiant Heat.

XXIV—Interference of Light.

XXV—Polarized Light.

XXVI—Acoustic Measurements.

XXVII—Thermo-Electricity.

XXVIII—Measurement of Low Resistance.

XXIX—Electrical Insulation.

Professors Rood and Hallock, Mr. Cushman, Mr. Gordon, and Mr. Parker

Open, with 10 hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: Courses II and IV of 8 and 7 hours.

Original research, conducted under the direction of Professors Rood and Hallock, is open to candidates for the degree of Ph.D., in their second year, whose major subject is Physics.

Equipment

The Physical Laboratory consists of six rooms devoted to physical measurements; some are arranged and used for optical and electrical purposes, others for special researches. The laboratory throughout is supplied with the street current of the Edison incandescent system, and all the ordinary conveniences. Among the pieces of apparatus the following may be specially mentioned:

For measurements of length there are three linear and three circular dividing engines of various designs; a Geneva Society comparator, and dividing engine; a Grunow cathetometer, spherometers, an optical lever, and micrometers of many kinds. For measurements of mass there are provided eight balances with weights, specific-gravity apparatus, hydrometers, areometers, Westfall and Jolly balances, and the various forms of vapor-density apparatus.

Standard mercurial barometers, aneroid and Mariotti barometers, Kater's and Borda's pendulums, and apparatus for studying elasticity are provided.

Also a monochord, Quincke's apparatus, Kundt's dust-figure apparatus and sets of organ pipes and tuning-forks for the study of sound.

Thermometers and apparatus for their calibration, and zero and boiling points, are supplied : there is also apparatus for determination of coefficients of expansion, for latent and specific heat, and calorimetry.

The optical rooms are furnished with eight spectrometers of different designs, small telescopes, opera-glasses, eight compound microscopes, sets of lenses, prisms, and gratings, a goniometer, sextant, optical benches, photometers, saccharimeters, total reflectometers, and apparatus for colorimetry, polarized light, and spectroscopy.

In the rooms devoted to electricity are nine galvanometers of various patterns, high and low resistance, ballistic and dampened ; electrometers, magnetometers, rheostats and bridges of all types ; condensers, batteries, keys, arc and incandescent lamps, ammeters and voltmeters, and four standard ohms.

The workshop is furnished with a lathe, plainer, grinding head, vises, carpenters' and machinists' bench, and tools for work in metal, wood, and glass.

Advanced students are taught and encouraged to repair, alter, and construct apparatus needed for their special work.

Physiology

JOHN GREEN CURTIS, M.D. *Professor*
FREDERIC SCHILLER LEE, Ph.D. *Demonstrator*
RICHARD HOOP CUNNINGHAM, M.D. *Alumni Association Fellow in Physiology*

Courses

I—GENERAL PHYSIOLOGY—Structure of protoplasm ; physiology of the cell ; irritability ; contractility ; heliotropism ; physiological division of labor and evolution of special functions ; general principles of secretion ; the nerve cell ; the germ cells. Lectures, 1 hour. Dr. LEE

Open as an elective to seniors who have had at least one year of General Biology, and, in conjunction with Course III, to candidates for the degree of A.M. or of Ph.D.

II—THE PHYSIOLOGY OF MAN AS RELATED TO THAT OF OTHER MAMMALS AND OF LOWER VERTEBRATES—Lectures and demonstrations, 4 to 6 hours. Beginning with the session of 1894–5, this course treats of different portions of its subject in alternate years, certain introductory lectures only being repeated annually. Professor CURTIS and Dr. LEE

Required, in the first year of *the four-years' course*, and in the second year of *the three-years' course*, of candidates for the degree of M.D.

Open as an elective to seniors in the School of Arts, and, in conjunction with Course IV, and to candidates for the degree of A.M. or of Ph.D.

III—LABORATORY COURSE IN GENERAL PHYSIOLOGY—5 hours. Dr. LEE

Open to qualified candidates for the degree of M.D., and in conjunction with Course I, to qualified candidates for the degree of A.M. or of Ph.D.

IV—LABORATORY COURSES—Personal instruction, private reading, practical work, and research. No definite number of hours. Professor CURTIS and Dr. LEE

Open to qualified candidates for the degree of M.D., and to qualified candidates for the degree of A.M. or of Ph.D.

Research

V—The Laboratory is open for research, under the direction of its officers, to advanced workers. No definite number of hours. Professor Curtis and Dr. Lee

Fellowships

For the Fellowships open to persons desiring to do special work under the Professor of Physiology, see the table of contents.

Marine Laboratory

An investigator's room at the Marine Biological Laboratory at Wood's Holl, Mass., has been provided by the university, for the use of the department of Physiology.

This renders possible, during the summer, researches upon the physiology of the marine fauna.

Equipment

The department of Physiology possesses :

(1) The main laboratory, covering 1769 square feet, and lighted on three sides.

(2) Two rooms for optical or psychological work or for photography, communicating with the main laboratory and with one another. One of these has a free southerly exposure for the heliostat.

(3) The Swift Physiological Cabinet, for the accommodation of a specially endowed and very full collection of apparatus of precision, mainly for research.

(4) A smaller laboratory, for the officers of the department.

(5) Easy access to a large lecture-room, specially fitted for experimental teaching ; and to demonstration-rooms for small classes.

The physiological journals in English, German, and French are accessible at the laboratory to advanced students ; also the most important monographs and other books, both modern and ancient.

A skilled mechanic is employed to devote his entire working time, at the laboratory, to the care and improvement of the plant, including the making, altering, and repairing of special apparatus. He also assists in the scientific manipulations.

The following machines and apparatus deserve mention :

An upright seven-horse-power steam-engine, mounted against a pier upon an iron bracket, to avoid floor vibrations, and working a shaft which runs the whole length of the main laboratory ; two steam lathes ; apparatus worked by steam for artificial respiration ; Ludwig's " Schlagwähler " ; kymograph for the long roll of paper, and high-speed drum kymograph, both worked by steam ; high-speed drum kymograph worked by weights ; two drum kymographs of the spring pattern ; two simple drums, to be revolved by hand, for students' use ; four " Basel stands " for the fine adjustment of recording levers ; Zeiss scales and other instruments for reading and measuring curves, including a planimeter ; electro-magnetic chronographs and control-hammer ; seconds pendulum ;

interrupter clock ; automatic dry-contact tuning-forks ; short-beam quantitative balance ; copper voltameter ; milliampère- and ampère-meters ; Wiedemann-duBois galvanometer, with coils of high and low resistance, Hauy's bar, telescope, and milk-glass scale ; capillary electrometers ; ohmmeter, for resistances of from 0.001 to 200,000 ohms ; Edelmann's faradimeter ; nine horizontal duBois induction coils ; two upright ditto ; a complete collection of duBois-Reymond's other apparatus ; moist chambers and muscle levers ; upright rheochord ; mechanical tetanomotor ; differential rheotome ; Marey's tambours, cardiographs, stethograph, and explorer of the human muscles ; sphygmographs ; plethysmograph ; two single and one double recording mercurial manometers ; spring manometers ; tonographs ; " stromuhr " ; frog-heart apparatus ; thermo-electric apparatus ; constant-pressure injection apparatus ; two mercurial gas-pumps ; large spectroscope ; direct vision spectroscope ; Ladd spectroscope ; four microspectroscopes ; heliostat ; eight microscopes and accessories ; Thoma's microtome ; Anschütz's " Schnellseher " ; numerous instruments and models for the investigation and demonstration of the physiology of sight and hearing ; casts and models of the brain ; Dalton's apparatus for making sections of the human brain.

Practice of Medicine

FRANCIS DELAFIELD, M.D., LL.D.....*Professor*
WILLIAM H. DRAPER, M.D.....*Professor of Clinical Medicine*
JAMES WEST ROOSEVELT, M.D.....*Clinical Lecturer*
WALTER B. JAMES, M.D.....*Clinical Lecturer*
FRANK W. JACKSON, M.D.....*Chief of Clinic and Instructor in Physical Diagnosis*
GEORGE ROE LOCKWOOD, M.D.....*Clinical Assistant and Instructor in Physical Diagnosis*
WILLIAM K. DRAPER, M.D.....*Clinical Assistant*
THOMAS S. SOUTHWORTH, M.D.....*Clinical Assistant*
VAN HORNE NORRIE, M.D.....*Clinical Assistant*

Courses

I—THE PRACTICE OF MEDICINE—Didactic lectures. 2 hours for five months, and 3 hours for three months. Professor DELAFIELD

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL LECTURES ON GENERAL MEDICINE AT THE VANDERBILT CLINIC—1 hour a week throughout the academic year. Th. at 3 P.M. Professor DELAFIELD

Required, in the second year, of candidates for the degree of M.D.

III—PHYSICAL DIAGNOSIS—Practical instruction ; twenty-one lessons for each student. Drs. JACKSON and LOCKWOOD

Required, in the second year, of candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN GENERAL MEDICINE—Roosevelt Hospital. M. at 4 P.M., throughout the academic year. Professors DELAFIELD and DRAPER and Dr. ROOSEVELT

New York Hospital. M. and Th., at 2.30 P.M., in November, December, January, February, and March. Professors DRAPER and PEABODY. (See "Materia Medica and Therapeutics.")

Bellevue Hospital. Tu., at 1.30 P.M., throughout the year. Drs. ROOSEVELT and JAMES, and Professor JACOBI. (See "Children, Diseases of.")

Attendance at hospital clinics is optional in the second and third years for candidates for the degree of M.D.

Romance Languages and Literatures

ADOLPHE COHN, LL.B., A.M. *Professor*
HENRY ALFRED TODD, Ph.D. *Professor of Romance Philology*
CARLO LEONARDO SPERANZA, LL.B., A.M. *Instructor*
BENJAMIN DURYEA WOODWARD, Ph.D. *Instructor*
LOUIS MARIE AUGUSTE LOISEAUX, S.B. *Tutor*
GEORGE BENDELARI, A.M. *Lecturer*

General Statement

The Department of the Romance Languages and Literatures has charge of all the courses of instruction and research, both in the School of Arts and in the School of Philosophy, dealing with the various languages that sprang from Latin after the unity of the Roman Empire was destroyed by the Germanic invasions of the fourth and fifth centuries after Christ. Chief among these languages are French, Italian, and Spanish, but several other idioms, of great philological and literary interest, some of them, like Portuguese and Rumanian, spoken in our own day by nations the importance of which is rather increasing than decreasing, are also included in the family.

The Department offers: (1st) to students in the School of Arts, practical instruction in French, Italian, and Spanish, courses in French, Italian, and Spanish literature, and elementary instruction in Romance philology; (2d) to students in the School of Philosophy, advanced instruction in literature and in Romance philology, courses in some of the languages unprovided for in the School of Arts, such as Provençal, and also instruction of a pedagogical character. One of the objects of the Department is to offer at least one course in every one of the languages of the Romance group.

Although no course in philology proper is offered to the members of lower classes in the School of Arts, it should be stated that from the very start care is taken that as far as possible the students be put in possession of the historical sequences that justify the present state of the languages of the group, so as to furnish a solid foundation for grammatical knowledge and to awaken, in some students at least, a taste for philological research.

The courses offered by the Department are grouped under the following headings: French, Italian, Spanish, Provençal, Portuguese and Rumanian, Romance Philology.

Course VI in this Department is given by Professor Brander Matthews of the Department of Literature.

Courses in French

ELEMENTARY COURSE—Books : Van Daell, *Introduction to the French Language* ; Halévy, *L'Abbé Constantin* ; G. de Peyrebrune, *Les Frères Colombe.*
3 hours, first term. Dr. WOODWARD

Intended for students who have not studied French before entering college, and who are willing to work hard enough to be able to join Course A at the beginning of the second term. Cannot be counted for a degree.

A—GRAMMAR, READING, COMPOSITION—Books : Edgren, *French Grammar* ; Daudet, *Morceaux choisis* ; Kimball, *Exercises in French Composition* ; About, *La Mère de la marquise* ; Sandeau, *Mademoiselle de la Seiglière* ; Labiche et Martin, *Le Voyage de M. Perrichon* ; Belot et Villetard, *Le Testament de César Girodot* ; Molière, *L'Avare* ; Thiers, *Bonaparte en Egypte.*
Outside reading : George Sand, *Nanon.*
3 hours. Mr. LOISEAUX and Mr. BENDELARI

Prescribed for freshmen who do not take German A or its equivalent.

B—GENERAL INTRODUCTION TO THE STUDY OF FRENCH LITERATURE—Books : Corneille, *Cinna* ; Racine, *Athalie* ; Molière, *Le Médecin malgré lui* ; La Fontaine, *Fables choisies* ; Bossuet, *Oraisons funèbres* ; Lesage, *Turcaret* ; *Extraits d'auteurs du XVIIIe siècle* ; Marivaux, *Le Jeu de l'amour et du hasard* ; Voltaire, *Mérope* ; Bowen, *Modern French Lyrics* ; Victor Hugo, *Ruy Blas* ; Balzac, *Mercadet* ; Pailleron, *Le Monde où l'on s'ennuie* ; Sainte-Beuve, *Extraits des Causeries du Lundi* ; Gazier, *Petite Histoire de la littérature française.*
Outside reading, first term : Voltaire, *Le Siècle de Louis XIV.* ; second term : Mme. de Staël, *Corinne*, and Victor Hugo, *Quatrevingt-treize.*
3 hours. Dr. WOODWARD and Mr. BENDELARI

Prescribed for sophomores who have taken French A in the freshman year, unless Chemistry I is substituted in its place.

I—FRENCH RHETORIC—Study of the rules of French prose and verse composition—Books : G. Crouslé, *Grammaire française, Cours supérieur* ; E. Legouvé, *La Lecture en action* ; Thieulin et Le Goffic, *Traité de Versification française* ; La Fontaine, *Fables* ; J. Reinach, *l'Eloquence française depuis la Révolution jusqu'à nos jours.* 3 hours. Professor COHN and Mr. LOISEAUX

Open to students who have taken Course B or its equivalent.

II—HISTORY OF FRENCH LITERATURE IN THE 17TH CENTURY—Lectures, essays, and outside reading. Books : Descartes, *Discours de la Méthode* ; Pascal, *Les Provinciales* (letters 1, 4, 13, édition Brunetière, Paris, Hachette) ; Corneille, *Théâtre choisi* ; Molière, *Œuvres complètes* ; Racine, *Œuvres complètes* ; Boileau, *l'Art poétique* ; Bossuet, *Oraisons funèbres* ; La Rochefoucauld, *Maximes* ; La Bruyère, *Les Caractères.* Collateral reading : Rambaud's *Histoire de la civilisation française.* 3 hours. Professor COHN.

Open to students who have taken Course B or its equivalent.

III—HISTORY OF FRENCH LITERATURE IN THE 18TH CENTURY—Lectures, essays, and outside reading. Books : Voltaire, *Théâtre choisi* (including *Zaïre, Mérope, Brutus, Mahomet, Tancrède*) ; *Zadig* ; *Traité de la Tolérance* ; *Lettres Philosophiques* (extracts) ; *Dictionnaire Philosophique* (extracts) ; *Correspondance* (extracts) ; Rousseau, *Discours sur les Sciences et les Arts, Dis-*

cours sur les Fondements de l'Inégalité parmi les hommes, *Lettre sur les Spectacles*, *Emile* (Livre IV); Montesquieu, *Lettres persanes*, *Esprit des lois* (first five books and extracts, edited by Paul Janet, Paris, Delagrave); Beaumarchais, *Mémoires*, *le Mariage de Figaro*; Condorcet, *Vie de Voltaire*. Collateral reading: Rambaud, *Histoire de la civilisation française*. 3 hours. Professor COHN

Open to students who have taken Course II or its equivalent.

The following down to Course XII are open to students who have taken Course III or its equivalent:

IV—History of French poetry in the first half of the nineteenth century, especially Victor Hugo and the Romantic movement. Lectures, essays, and outside reading. Books: Lamartine, *Méditations*; Victor Hugo, *Preface to Cromwell*, *Hernani*, *Marion Delorme*, *Le Roi s'amuse*, *Ruy Blas*, *Les Burgraves*, *Odes et Ballades*, *Les Châtiments*; Alfred de Musset, *Poésies nouvelles*; Georges Pellissier, *Le Mouvement littéraire au XIXe Siècle*; Brunetière, *l'Evolution de la poésie lyrique en France au XIXe Siècle*. 1 hour. Professor COHN

V—HISTORY OF LITERARY CRITICISM IN FRANCE, ESPECIALLY SAINTE-BEUVE—Lectures, essays, and outside reading. Books. Sainte-Beuve, *Portraits littéraires* (extracts), *Portraits contemporains* (extracts), *Causeries du Lundi* (extracts), *Nouveaux Lundis* (extracts); Brunetière, *l'Evolution des genres dans l'histoire de la littérature* (volume I.); Paul Bourget, *Essais de psychologie contemporaine*, *Première Série*; Hatzfeld et Meunier, *Les Critiques littéraires du XIXe siècle*. 1 hour. Professor COHN

VI—THE FRENCH DRAMATISTS OF THE 19TH CENTURY—Books: Hugo, *Hernani*, *Ruy Blas*, *Marie Tudor*; Dumas, *Henri III. et sa Cour*, *la Tour de Nesle*, *Antony*; Scribe, *Adrienne Lecouvreur*, *Une Chaîne*; Augier, *le Gendre de M. Poirier*, *l'Aventurière*; Dumas fils, *le Demi-Monde*, *l'Etrangère*; Sardou, *les Pattes de Mouche*, *Patrie*; Labiche, *le Voyage de M. Perrichon*; Meilhac et Halévy, *Froufrou*, *la Boule*; Zola, *Thérèse Raquin*. 2 hours. Professor BRANDER MATTHEWS

VII—WRITERS OF THE 16TH CENTURY, ESPECIALLY MONTAIGNE—Books: Darmesteter et Hatzfeld, *Le Seizième Siècle en France* (Paris, Delagrave); Montaigne, *Essais*. 1 hour. Mr. LOISEAUX

[Not given in 1894–5.]

VIII—OLD FRENCH; reading of selected extracts—Books: Clédat, *Morceaux choisis des auteurs français du moyen âge*; Gaston Paris, *La Littérature française au moyen âge*. 2 hours, first term. Dr. WOODWARD

IX—THE FRENCH CHRONICLERS OF THE MIDDLE AGES. Books: Petit de Julleville, *Chroniqueurs français du moyen âge*; Gaston Paris, *La Littérature française au moyen âge*. 2 hours, second term. Dr. WOODWARD

X—OLD FRENCH DIALECTS, ESPECIALLY NORMAN AND ANGLO-NORMAN—Books: Bartsch and Horning, *La Langue et la Littérature françaises*; Suchier, *Reimpredigt*; Philippe de Thaon, *Cumpot* (Mall's edition). 1 hour. Professor TODD

XI—Methods of Teaching French—2 hours. Professor Cohn

Open both to students in Columbia College and to students in the Teachers College. [Not given in 1894–5.]

XII—Seminar: Investigations of Special Topics in French Literature. 1 hour. Professor Cohn

N.B.—For other advanced courses in French Language or Literature, see under Romance Philology.

Optional Courses

French Conversation (elementary course)—1 hour. Mr. Loiseaux

French Conversation (advanced course)—1 hour. Mr. Loiseaux

Courses in Italian

I—Elementary Work—Grammar, reading, composition. Books: Grandgent, *Italian Grammar*; Grandgent, *Italian Composition Book*; Puccianti, *Antologia della Prosa Italiana Moderna*. 3 hours. Mr. Speranza

Open to juniors; open also to freshmen and sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.

II—Composition, Prose and Poetry of the 15th and 16th Centuries. Books: Fr. Torraca, *Manuale della Letteratura Italiana* (Torino, 1886). The school editions of *Orlando Furioso*, *Gerusalemme Liberata*, and *Il Principe*. 3 hours. Mr. Speranza

III—Composition, Prose and Poetry of the 14th Century—Dino Compagni's *Cronica*; Boccaccio's *Decamerone*; Petrarch's *Canzionere*; Dante's *Lyrics*. 3 hours. Mr. Speranza

[Not given in 1894–5.]

IV—Critical Study of Dante's Divina Commedia, principally from the standpoint of art—2 hours, for two years. Mr. Speranza

[Not given in 1894–5.]

V—History of Italian Literature—Lectures and private reading. 1 hour. Mr. Speranza

[Not given in 1894–5.]

N.B.—For other advanced courses in Italian Language and Philology, see under Romance Philology.

Courses in Spanish

I—Elementary Course—Grammar, reading, composition. Books: Knapp, *Spanish Grammar*; Knapp, *Spanish Readings*; Valera, *Pepita Jimenez*. 3 hours. Professor Todd and Mr. Loiseaux

Open to juniors; open also to freshmen and sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.

II—Don Quijote and the Literature of the Golden Age—Books: Knapp, *Spanish Grammar*; Cervantes, *Don Quijote*; *Entremeses*; Lope de Vega, *la Estrella de Sevilla*; Alarcon, *la Verdad sospechosa*: Juan Calderon, *Cervantes vindicado*. 3 hours. Mr. Speranza

III—Critical Study of the Literature of the Golden Age—3 hours. Mr. ———.

[Not given in 1894–5.]

IV—The Origins of Spanish Poetry—2 hours. Mr. ———.
[Not given in 1894–5.]

V—History of Spanish Literature—Lectures and private reading. 1 hour. Professor Cohn
[Not given in 1894–5.]
N.B.—For other advanced courses in Spanish Language and Philology, see under Romance Philology.

Courses in Provençal

I—Old Provençal—Books: Bartsch, *Chrestomathie Provençale*, (Elberfeld, 1880); Gröber's *Grundriss*, (Strasburg, 1888). 2 hours. Professor Todd

Courses in Portuguese and Rumanian

Two courses are offered to advanced students, one in Portuguese, by Professor Todd, the other in Rumanian, by Professor Cohn. Each of them is a course of 2 hours throughout the year.

Courses in Romance Philology

I—Introduction to Romance Philology—2 hours. Professor Todd
Open to seniors in the School of Arts and to university students.

The following courses are open only to university students:

II *a*—Formative Elements of Romance Speech—Lectures and class work. Books: Gröber, *Grundriss*; Schwan, *Altfranzösische Grammatik*. 1 hour. Professor Todd

II *b*—Chanson de Roland (Advanced Course)—1 hour a week. Professor Todd

III—Seminar—Critical Study on the Manuscript of Ægidius Colonna's Treatise, *Du Gouvernement des Rois*. 2 hours. Professor Todd

N.B.—Weekly lectures in French, Italian, and Spanish, open to all members of the university, are given by the members of the Department and by distinguished European lecturers.

The Romance Club, which consists of all the instructors and advanced students in the Department, holds fortnightly meetings in which the latest contributions to philology and literature in the field of the Department are reported upon and discussed.

Equipment

The Library of Columbia College contains a large number of works in French, English, German, Italian, and Spanish, bearing upon the study of Romance languages and literatures. It is especially rich in periodicals. In addition to the books and collections in the library the department has at its disposal the very valuable library of Mr. John Edward Kerr, Jr., of New York City, which is perhaps the finest collection to be found in this country of works relating to the legend of Tristan in connection with the romances of the Round Table. This collection is now deposited in room 8, No. 52 East 49th Street.

Surgery

WILLIAM TILLINGHAST BULL, M.D.....*Professor*
ROBERT F. WEIR, M.D.....*Professor*
CHARLES MCBURNEY, M.D.....*Professor of Clinical Surgery*
FRANK HARTLEY, M.D.....*Clinical Lecturer and Instructor in Operative Surgery*
FRANCIS HARTMAN MARKOE, M.D.....*Clinical Lecturer*
BERN BUDD GALLAUDET, M.D.....*Clinical Lecturer*
ELLSWORTH ELIOT, M.D.....*Chief of Clinic and Instructor in Minor Surgery*
CHARLES T. PARKER, M.D.....*Assistant Instructor in Operative Surgery*
CHARLES NORTH DOWD, M.D.....*Clinical Assistant*
JOSEPH AUGUSTUS BLAKE, M.D.....*Clinical Assistant*
PERCY RANNEY BOLTON, M.D.....*Clinical Assistant*
WALTER BENSEL, M.D.....*Clinical Assistant*
LOUIS IRVING MASON, M.D.....*Clinical Assistant*
EDWARD M. FOOTE, M.D.....*Clinical Assistant*

Courses

I—SURGICAL PATHOLOGY, GENERAL AND REGIONAL SURGERY—Didactic lectures. 3 hours. Professors BULL and WEIR

Required, in the third and fourth years, of candidates for the degree of M.D.

II—CLINICS IN GENERAL SURGERY AT THE VANDERBILT CLINIC—1 hour. M. at 12. Professors BULL and WEIR

Required, in the third year, of candidates for the degree of M.D.

III—MINOR SURGERY AND BANDAGING—Practical instruction at the Vanderbilt Clinic. 12 lessons for each student. Dr. ELLSWORTH ELIOT

Required, in the third year, of candidates for the degree of M.D.

IV—OPERATIVE SURGERY UPON THE CADAVER—Practical instruction to classes of six members each. Each student performs for himself upon the cadaver the principal operations, including the ligation of arteries, amputations, resections, and the removal of parts. Special attention is paid to operations upon the abdominal viscera. 13 to 14 lessons for each student. Drs. HARTLEY and PARKER

Optional, in the fourth year, for candidates for the degree of M.D.

V—HOSPITAL CLINICS IN GENERAL AND OPERATIVE SURGERY—

New York Hospital.

Sat. at 2.30 P.M. Professors BULL and WEIR

W. at 2.30 P.M. from February to June. Professor WEIR

Th. at 3 P.M. from February to June. Dr. HARTLEY

Roosevelt Hospital, Syms Operating Theatre.

Sat. at 2.30 P.M. Professor MCBURNEY

Bellevue Hospital.

Th. at 2.30 P.M. Drs. F. H. MARKOE and GALLAUDET

St. Luke's Hospital.

F. at 2.30 P.M. from October to February. Dr. F. H. MARKOE

Cancer Hospital.

Th. at 2.30 P. M. from February to May. Dr. C. N. DOWD

Attendance at hospital clinics is obligatory in the third and fourth years for candidates for the degree of M.D.

UNIVERSITY DEGREES

Candidates for these degrees are governed by the regulations established by the University Council, and by the supplemental regulations established by the several University Faculties with the approval of the Council. The following is a summary of these regulations, both general and special.

Regulations for the Degrees of Master of Arts and Doctor of Philosophy

1. In accordance with action taken by the University Council on May 15, 1894, candidates for the degrees of Master of Arts and Doctor of Philosophy must either

A. Hold the degree of Bachelor of Arts from one of the colleges named below:

Allegheny,
Amherst,
Antioch,
Augustana,
Bates,
Beloit,
Boston University,
Bowdoin,
Brown University,
Bryn Mawr,
Buchtel,
Bucknell,
California, University of,
Carleton,
Centre,
Chicago, University of,
Cincinnati, University of,
Clark University,
Colby University,
Colgate University,
Colorado, University of,
Columbia,
Cornell,
Cornell University,
Cumberland University,
Dalhousie,
Dartmouth,
Denison University,
De Pauw University,
Dickinson,
Doane,
Earlham,
Franklin and Marshall,
Georgia, University of,
Georgetown (D. C.),
Hamilton,
Harvard,
Haverford,
Hiram,
Hobart,
Holy Cross,
Illinois,
Illinois, University of,
Indiana, University of,
Iowa College,
Iowa, State University of,
Johns Hopkins University,
Kansas, University of,

Kenyon,
Knox,
Lafayette,
Lehigh University,
Leland Stanford, Jr., University,
Marietta,
McGill University,
Miami University,
Michigan, University of,
Middlebury,
Minnesota, University of,
Mississippi, University of,
Missouri, University of,
Mt. Union,
Nebraska, University of,
New Brunswick, University of,
New York, College of the City of,
New York, University of the City of,
North Carolina, University of,
North Dakota, University of,
Northwestern University,
Oberlin,
Ohio State University,
Ohio Wesleyan University,
Oregon, University of,
Pennsylvania, University of,
Princeton,
Radcliffe,
Rochester, University of,
Rutgers,
Seton Hall,
Smith,
St. Francis Xavier,
St. Lawrence University,
St. Stephens,
St. Xavier (Cincinnati),
South, University of,
Swarthmore,
Syracuse University,
Texas, University of,
Toronto, University of,
Trinity,
Tufts,
Tulane University of Louisiana,
Union,
Ursinus,
Vanderbilt University,
Vassar,
Vermont, University of,
Victoria, University of,
Virginia, University of,
Washburn,
Washburn (Ind.),
Washington University (Mo.),
Washington and Jefferson,
Wellesley,
Wesleyan University (Ct.),
Western Reserve University,
Western University of Pennsylvania,
Williams,
Wisconsin, University of,
Wittenberg,
Woman's College, Baltimore,
Wooster, University of,
Yale University,

or

B. Hold the degree of Ph.B., B.S., or B.L., from an institution which requires for that degree at least the following subjects of instruction: Latin, to include at least the ability to read easy Latin at sight and to write easy Latin prose; history and political economy, for at least two years; logic and psychology, for at least one year; English language and literature, for at least two years; French and German, so far as the ability to read easy prose at sight.

C. Candidates who are not able to meet the requirements mentioned under A or B, will only be admitted to candidacy for the degrees of A.M. and Ph.D. by special vote of the University Council.

It is further provided that candidates for these degrees, when they are taken in science and based upon a preparatory scientific training only, are required to pursue, for not less than one year, a minor subject under the direction of either the Faculty of Philosophy or the Faculty of Political Science.

2. Each student who declares himself a candidate for the degrees of Master of Arts and Doctor of Philosophy, or either of them, shall, immediately after registration, designate one principal or major subject and two subordinate or minor subjects, which, when approved by the Faculty or Faculties in whose jurisdiction the subjects lie, shall be the studies of his university course. Should the subjects designated by the candidate fall within the jurisdiction of more than one University Faculty, the candidate's selection must receive the sanction of the President before it is recorded.

3. Candidates for the degrees of Master of Arts and Doctor of Philosophy must pursue their studies in residence for a minimum period of one and two years, respectively, under the direction of the professors and other officers of instruction in charge of the subjects selected by the candidates as major and minor, attending such lectures as may be designated and performing faithfully such other work in connection therewith as may from time to time be prescribed. Residence at other universities will be duly credited to a candidate, but no degree will be conferred upon any student who has not been in residence at Columbia College for at least one term and session.

4. The subjects from which the candidate's selection must be made are :

Under the Faculty of Philosophy—Logic, psychology, ethics, history of philosophy, history of education, science and art of teaching, Greek language and literature, Greek archæology and epigraphy, Latin language and literature, Roman archæology and Latin epigraphy, English language and literature, Anglo-Saxon, Gothic, High German language and literature (including Modern, Middle, and Old), Low German language and literature (including old Saxon, Frisian, Dutch, and Flemish), Scandinavian language and literature (including Old Norse, Icelandic, Swedish, and Danish), Romance philology, Romance literatures, Comparative study of literature (including the philosophy of literature), Sanskrit language and literature (Vedic and Classical), the Iranian languages and literatures, and any two of the following : Hebrew language and literature, Arabic language and literature, Syriac language and literature, Assyrio-Babylonian language and literature, Ethiopic language and literature, Semitic epigraphy.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from those offered by any one department. A major subject will involve attendance at lectures and seminars amounting to four or more hours weekly ; a minor subject will involve attendance of two or more hours weekly.

Under the Faculty of Political Science—

Group I.—History and Political Philosophy: 1. European history ; 2. American history ; 3. political philosophy.

Group II.—Public Law and Comparative Jurisprudence : 1. constitutional law ; 2. international law ; 3. criminal law ; 4. administrative law ; 5. comparative jurisprudence.

Group III.—Economics and Social Science : 1. political economy and finance ; 2. sociology and statistics.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from any one of the above groups, and by the following rules :

Candidates offering European history as their major subject, must offer American history as one of the minor subjects, and *vice versa*.

Candidates offering Political economy and finance as their major subject, must offer sociology and statistics as one of the minor subjects, and *vice versa*.

Candidates will not be permitted to offer Constitutional Law alone as their major subject for the degree of Doctor of Philosophy, but must combine it with the course on General International Law, or on Comparative Administrative Law.

Candidates offering International Law, or Criminal Law, or Administrative Law as their major subject, must take Constitutional Law as one minor subject.

Candidates will not be permitted to offer Criminal Law alone as their major subject for the degree of Doctor of Philosophy, but must combine with it the course on General International Law.

To be recognized as a major subject for the degree of Master of Arts, the courses selected must aggregate at least two hours per week throughout the year, and must also include attendance at a seminar ; for a minor subject for the degree of Master of Arts, the attendance at a seminar is not required.

To be recognized as a minor subject for the degree of Doctor of Philosophy, courses must be taken, in addition to the requirements for a minor subject for the degree of Master of Arts, aggregating two hours weekly. To be recognized as a major subject for the degree of Doctor of Philosophy, all of the courses and seminars in that subject must be taken.

Under the Faculty of Pure Science—The subjects represented in this Faculty fall under the following heads : Mathematics, Mechanics, Astronomy, Meteorology, Physical Geography, Geodesy, Physics, Chemistry, Mineralogy, Geology, Palæontology, Lithology, Biology, Botany, Physiology, Anatomy, and Bacteriology.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that no two of the subjects selected may be in any one department, unless the consent of the Faculty thereto shall have first been obtained.

Under the Faculty of Mines—Engineering, Civil, Mechanical, Electrical, and Sanitary, Mining, Metallurgy, and Architecture.

5. Immediately on registration each student shall be given a registration book, on which shall be inscribed the name of the student and the date of his enrolment or registration. In this registration book the student shall enter, at the beginning of each academic year or session, the subjects or titles of the several courses of instruction or investigation which he proposes to follow. At the opening exercise of every such course, or as soon thereafter as may be possible, the student shall present to the professor or instructor in charge his registration book, in order that such professor or instructor may enter therein his name and the date of the opening of the course. At the close of every such course followed by the student, the professor or instructor in charge shall again enter in the registration book his name and the date of the closing of the course, if the student has faithfully attended the same, and performed all the duties required of him in connection therewith. At the time of filing his application to be examined for the degrees of Master of Arts and Doctor of Philosophy, or

either of them, every candidate must present to the Dean his registration book properly signed and dated, as above prescribed, by the professors or instructors in charge of the several courses which he may have attended, as evidence that he is properly entitled to examination for a degree.

6. Students desiring to be examined as candidates for any degree must make written application for such examination to the Dean of the proper Faculty, on blank forms provided for the purpose. All such applications must be made on or before April 1 of the academic year in which examination is desired.

7. Each candidate for the degree of Master of Arts, in addition to passing satisfactory examinations on prescribed portions of the subjects selected by him as major and minor, shall present an essay on some topic previously approved by the professor in charge of his major subject. Before the candidate is admitted to examination, the professor in charge of his major subject must have signified his approval of such essay. The Faculty of Philosophy requires that this essay be presented not later than May 1 of the academic year in which the examination is to take place. The Faculty of Political Science requires this essay to be a paper read during the year before the seminar of which the candidate is a member.

8. Each candidate for the degree of Doctor of Philosophy, in addition to passing satisfactory examinations on the subjects selected by him as major and minor, shall present a dissertation, embodying the result of original investigation and research, on some topic previously approved by the Faculty. When such dissertation has been approved by the Faculty, it shall be printed by the candidate, and one hundred and fifty copies shall be delivered to the Faculty. On the title-page of every such dissertation shall be printed the words : " Submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, in the University Faculty of ————————, Columbia College." There shall be appended to each dissertation a statement of the educational institutions that the author has attended, a list of the degrees and honors conferred upon him, as well as the titles of any previous publications.

The several Faculties have delegated the power to approve the subjects chosen for his dissertation by any candidate for the degree of Doctor of Philosophy, as well as the power to approve the dissertation itself, to the professor in charge of the candidate's major subject.

The Faculty of Philosophy requires the submission and approval of the dissertation before the candidate is admitted to examination.

The Faculty of Political Science requires the dissertation to be submitted not later than April 1 of the academic year in which the examination for the degree is desired. With the consent of the Dean and professor in charge of the candidate's major subject, the examination may be held before the printed dissertation is submitted.

The Faculty of Pure Science requires the dissertation to be submitted not later than the third week in March of the academic year in which the examination is desired ; and when printed it must be printed in the size and form either of the Annals or Memoirs of the New York Academy of Sciences, according to the nature of the subject, and must be delivered to the Faculty before the final examination.

9. Every candidate for the degree of Doctor of Philosophy, in addition to passing such other examinations as may be required by the Faculty, shall be subjected to an oral examination on his major subject, and shall defend his dissertation, in the presence of the entire Faculty or of so many of its members as may desire to attend. The ability to read at sight Latin, French, and German is required by the Faculties of Philosophy and Political Science; the ability to read at sight French and German is required by the Faculties of Pure Science and Mines.

10. Students holding college degrees, who shall have completed with marked distinction the entire course of the School of Law, the School of Medicine, or the School of Mines, may be recommended by the Faculty of the School in which they have studied, for the degree of Master of Arts; provided that in each case the candidate present a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of either the Faculty of Philosophy or the Faculty of Political Science to the extent of a minor course for not less than one year.

Regulations for the Degree of Master of Laws

1. Any student who has satisfactorily completed the regular course of study in the School of Arts of Columbia College, to the close of the junior year, or in some other college maintaining an equivalent curriculum (every such case of equivalency to be considered on its own merit), shall be entitled to be recommended for the degree of Master of Laws upon certificates from the Faculty of Law and the Faculty of Political Science that he has satisfactorily completed a four years' course of study under said Faculties.

2. Every candidate for the degree of Master of Laws must elect from the subjects offered by said Faculties, courses aggregating, in the four years, fifty-two hours per week, and must pass satisfactory examinations upon the subjects elected; provided that not more than thirty-four hours of work may be elected either in the field of Private Law, or in that of Public Law, Social Ethics, History, and Economics.

3. Students, otherwise qualified, who have received the degree of Bachelor of Laws from this College after pursuing the full course of study, shall be entitled, upon pursuing for an additional year a course of study of at least thirteen hours per week, under either or both of said Faculties, and passing satisfactory examinations therein, to receive the degree of Master of Laws; provided that no student shall receive the degree who has not studied and passed satisfactory examinations in Comparative Constitutional Law, Administrative Law, Roman Law, International Law, and in the three courses offered on Equity,* and who has not pursued here or elsewhere courses of instruction satisfactory to the Faculty of Political Science in History, Social Ethics, and Economics.

4. Each Faculty shall determine the order in which the subjects offered by it shall be taken, and the maximum amount of work to be done therein during any one year.

* Under this provision students would be allowed, but not required, to take History of European Law, Conflict of Private Law, Law of Municipal Corporations, and the Law of Taxation.

5. Students from other universities, colleges, or law schools who shall have satisfactorily completed a course of study equivalent to at least one term of thirteen hours per week in the subjects indicated in Section 2, after receiving a Bachelor's degree, may be excused from the corresponding number of terms of the four years' residence required at Columbia, provided that in no case shall any one receive the degree of Master of Laws who has not spent at least four years in the study of the said subjects in some university, college, or law school; and the decision whether work at another institution shall be accepted as equivalent to work at Columbia, shall rest, as far as the studies under the Faculty of Law are concerned, with the Faculty of Law, and as far as the studies under the Faculty of Political Science are concerned, with the Faculty of Political Science. But neither Faculty shall admit a student from another university, college, or law school to examination for the degree of Master of Laws without a residence of at least one term in this University.

SCHOOL OF ARTS

The following departments are represented in the Faculty :

ASTRONOMY
BIOLOGY
BOTANY
CHEMISTRY
ENGLISH
 ENGLISH LANGUAGE AND LITERATURE
 LITERATURE
 RHETORIC AND ENGLISH COMPOSITION
GEOLOGY
GERMANIC LANGUAGES AND LITERATURES
GREEK
HEBREW
HISTORY
LATIN
MATHEMATICS
MECHANICS
PHILOSOPHY, ETHICS, AND PSYCHOLOGY
PHYSICS
POLITICAL ECONOMY
ROMANCE LANGUAGES AND LITERATURES

Officers of the Faculty

Ex-Officio Members of the University Council

J. H. Van Amringe, Ph.D., L.H.D *Dean*
H. T. Peck, Ph.D., L.H.D..... *Secretary*

Standing Committees for 1894

Committee on Curriculum and Scheme of Attendance

Professor Van Amringe, *chairman*
" Mayo-Smith
" Butler
" Woodberry
" Perry

Committee on Free and Reduced Tuition

Professor Van Amringe, *chairman*
" Price
" Rees

Committee on Entrance Examinations

Professor Peck, *chairman*
" Goodwin
" W. H. Carpenter
" Cohn
" Perry
" G. R. Carpenter

Committee on Honors

Professor Peck, *chairman*
" Hallock
" Woodward

Faculty

SETH LOW, LL.D., *President*

JOHN HOWARD VAN AMRINGE, A.M., Ph.D., L.H.D., *Professor of Mathematics*

OGDEN N. ROOD, A.M., *Professor of Physics*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*

JOHN W. BURGESS, A.M., Ph.D., LL.D., *Professor of History, Political Science, and Constitutional Law*

RICHMOND MAYO-SMITH, A.M., Ph.D., *Professor of Political Economy and Social Science*

*AUGUSTUS C. MERRIAM, A.M., Ph.D., *Professor of Greek Archæology and Epigraphy*

THOMAS R. PRICE, A.M., LL.D., *Professor of the English Language and Literature*

HJALMAR HJORTH BOYESEN, Ph.D., *Professor of the Germanic Languages and Literatures*

JOHN KROM REES, A.M., E.M., *Professor of Astronomy*

MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*

*JASPER T. GOODWIN, A.M., *Adjunct Professor of Mathematics*

FRANK J. GOODNOW, LL.B., A.M., *Professor of Administrative Law*

RICHARD J. H. GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

EDWIN R. A. SELIGMAN, A.M., Ph.D., *Professor of Political Economy and Finance*

HARRY THURSTON PECK, A.M., Ph.D., LL.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, A.M., Ph.D., *Professor of Philosophy, Ethics, and Psychology*

WILLIAM HENRY CARPENTER, Ph.D., *Adjunct Professor of German and the Scandinavian Languages*

NATHANIEL L. BRITTON, Ph.D., *Professor of Botany*

HERBERT L. OSGOOD, A.M., Ph.D., *Adjunct Professor of History*

HENRY F. OSBORN, Sc.D., *DaCosta Professor of Biology*

EDWARD D. PERRY, A.M., Ph.D., *Professor of Sanskrit*

WILLIAM A. DUNNING, Ph.D., *Adjunct Professor of History*

A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D., *Adjunct Professor of the English Language and Literature*

ADOLPHE COHN, A.M., *Professor of the Romance Languages and Literatures*

GEORGE E. WOODBERRY, A.B., *Professor of Literature*

E. B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*

JAMES F. KEMP, A.B., E.M., *Professor of Geology*

WILLIAM HALLOCK, Ph.D., *Adjunct Professor of Physics*

R. S. WOODWARD, C.E., *Professor of Mechanics*

HENRY A. TODD, Ph.D., *Professor of Romance Philology*

GEORGE R. CARPENTER, A.B., *Professor of Rhetoric and English Composition*

THOMAS SCOTT FISKE, Ph.D., *Adjunct Professor of Mathematics*

*HAROLD JACOBY, A.B., *Adjunct Professor of Astronomy*

* Absent on leave.

Emeritus Officers

HENRY DRISLER, LL.D., *Emeritus Professor of the Greek Language and Literature*

JOHN D. QUACKENBOS, A.M., M.D., *Emeritus Professor of Rhetoric*

For details as to other officers of instruction see departmental statements.

RULES AND REGULATIONS FOR THE GOVERNMENT OF STUDENTS

From the Revised Statutes, Adopted June 6, 1892

1 (*a*) There shall be four classes of students, to be designated respectively as the freshman class, the sophomore class, the junior class, and the senior class. The course of study of each of these classes shall occupy a year, and the entire course four years. C. viii., section 4.

(*b*) Every student who shall have completed the entire course of four years, and shall have passed satisfactorily all the examinations required of him, shall be qualified to receive the degree of Bachelor of Arts. C. viii., section 5.

(*c*) No student shall be admitted to the freshman class at its formation unless he shall have attained the age of fifteen years, nor to a more advanced standing without a corresponding increase of age; but this rule may be dispensed with when, in the opinion of the Dean, there are sufficient reasons to justify its relaxation. C. viii., section 2.

(*d*) Every candidate for admission shall be required to present, before examination, a certificate of good moral character from his last teacher, or from some citizen in good standing; and students from other colleges shall be required to bring certificates from such colleges of honorable discharge. C. viii., section 3.

Entrance Examination

2 The entrance examination is designed to test the ability of the candidate to undertake the course of study, and not merely to ascertain the character and amount of his acquired knowledge.

3 Each applicant for admission to the freshman class must file with the Dean, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination and the certificate as to his moral character which is required by the College statutes (1 *d*). No student will be examined in June, 1895, whose name is not enrolled and whose certificate is not filed on or before June 6, 1895; nor will any student be examined in September, 1895, whose name is not enrolled and whose certificate is not filed on or before September 23, 1895. Blank forms of the certificate required can be had upon application to the registrar. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

4 Entrance examinations will be held at the College on Thursday and the days following of commencement week in June, and on the last Monday of September, and upon so many of the days following as may be necessary. In 1895 the examinations will begin on June 13 and September 30. There will be two examinations daily. One session from 9.30 A.M.-12 M.; the other from 1.30 P.M.-4 P.M.

5 Applicants for admission to the freshman class are required to pass a satisfactory examination in the following seventeen subjects:

English

1 Grammar—(Whitney's Essentials of English Grammar indicates the field to be covered).

2 Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged with reference to spelling, punctuation, grammar, division by paragraphs, and expression.

For 1895, the works prescribed are:
Shakspere's Twelfth Night, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, and Macaulay's Essays on Milton and Addison.

For 1896, the works prescribed are:
Shakspere's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton, and Webster's First Bunker Hill Oration.

Latin

3 Five books of Cæsar's Commentaries on the Gallic War.
4 Six orations of Cicero; reading at sight a short passage of easy Latin prose.
5 The first six books of Vergil's Æneid.
6 Prosody.
7 Grammar and prose composition. (As to the latter, Daniell's Exercises in Latin Prose Composition, both parts, indicates the field to be covered.)

Greek

8 Xenophon's Anabasis, Books 1 and 2.
9 Xenophon's Anabasis, Books 3 and 4; reading at sight a short passage of easy Greek prose.
10 Three books of Homer's Iliad, with prosody.
11 Grammar and prose composition. (As to the latter, Jones's Exercises in Greek Prose Composition indicates the field to be covered).

Ancient History and Geography

12 The ancient history of Greece and Rome (the treatment of this subject in Myers's Ancient History indicates the field to be covered), including the historical geography of these countries.

Mathematics

13 Arithmetic, including the metric system of weights and measures.

14 Algebra, to quadratic equations, including radicals and the binomial theorem.

15 Plane geometry.

French or German

16*a* The ability to read easy French, such as Rambaud's Histoire de la Civilisation Française, and

17*a* The elements of French grammar ; or

16*b* The ability to read easy German, such as Andersen's or Grimm's Märchen, and

17*b* The elements of German grammar.

6 The results of an entrance examination, entire or partial, will not be allowed to stand to the credit of a candidate for a longer period than sixteen months.

7 The Committee of the Faculty on Entrance Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, which candidates have been admitted, which have been admitted conditionally, and which have been rejected.

8 Students admitted conditionally to the freshman class at the beginning of the academic year shall be held under probation till the end of the first term ; and such as have not then made satisfactory progress in all their studies shall be reported by the Dean to the Faculty, which shall decide whether they be dropped from the roll of the College, or have their period of probation extended. No student shall be promoted to the sophomore class until he has satisfied all his entrance conditions.

9 The Committee of the Faculty on Entrance Examinations have jurisdiction over all questions arising under the rules relating to those examinations.

Preliminary Examination

10 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the time appointed for the examination in May or June of the year preceding his admission into the freshman class, but not in September or October, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination the following :

Latin : Subject 3 and, if desired, either 4 or 5.*

Greek : Subject 8 and, if desired, 9.*

Mathematics : Subject 13 and, if desired, 14.

* At the preliminary examination the candidate will be tested, but not passed, in Latin and Greek grammar.

11 After such preliminary examination, applicants will not be allowed to finish their examination on the requirements for admission until the entrance examination of the following year without the written approval of the Dean be obtained during the month of June.

Admission of Special Students

12 Candidates for admission as special students, to pursue either a partial or irregular course, will make application to the Dean.

Admission to Advanced Standing

13 Candidates for admission from other colleges, and those desiring to be admitted to advanced standing on examination, will make application to the Dean : but after October 15 no student will be admitted to the senior class as a candidate for a degree at the following commencement.

Examinations

14 Two examinations of all the classes are held every year, one commencing on the last Monday in January, and the other on the Monday of the third week preceding commencement. The former is called the mid-year examination ; the latter, the final examination. It is the privilege of any department to announce that in some or all of its courses the result of the mid-year examination will be tentative only, the grade given after the final examination applying to the whole year.

15 Any student who shall have been absent for more than ten per cent. of the exercises in any course during a single term, shall not be entitled to examination in that course.

16 No student will be granted a leave of absence at any time. Necessary absences must be reported to the Dean. Every student is expected and required to keep an account of his absences, and should he exceed the limit allowed in any course, he must present to the Dean, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination.

17 A student absent from or found deficient (20) at a mid-year or final examination in any course, or a student debarred from any examination in accordance with the provisions of 15, who fails to make good his deficiency at the special examination held during the week preceding the opening of the College in October, will be dropped from the roll of his class. He will not be permitted to attend any of the exercises of the said class without the consent of the Dean, given for reasons of weight ; but he may enter the succeeding class and pursue the course or courses in which his deficiency exists, and present himself for examination on such course or courses with that class. Upon failing a third time in any course his name will be dropped from the roll of the College. No student dropped from the roll of his class or of the College under the provisions of this section, will be accepted as a special student.

18 Examinations to enable deficient or debarred students to make good their deficiencies are held during the week immediately preceding the opening of the College in October; and, for members of the senior class only, during the first week in May.

Proficiency and Deficiency

19 At the close of every term, and after the stated examination has been held, each officer of instruction will report to the Dean a list of all the students in his several courses, classifying them in five grades, namely, A, B, C, D, E, according as their work in the course has been excellent, good, fair, poor, or a failure. Each student's record, up to his senior year, will be transmitted to his parent or guardian by the Dean at the close of each term.

20 Students reported in grade E in any course shall be deemed deficient in that course, and required to pass another examination in it at the time fixed for the special examination for debarred and deficient students, unless, for reasons of weight, the Dean shall otherwise direct (see 17 and 18).

21 Students reported in grade D in any course shall be warned by the instructor in charge thereof that their work is so unsatisfactory that, unless improved, it may result in their being found deficient at the close of the next term.

22 Students reported in grade D in two or more courses shall be warned by the Dean that their record is not satisfactory, and that, unless improved, it may be found necessary to require them to take the courses a second time or to substitute other courses.

23 A student reported in grade D in four or more courses at the close of the year, and not reported in grade A or B in any course, will not be permitted to go on with his class without the consent of the Dean, given for reasons of weight, nor will he be accepted as a special student; but he may enter the next succeeding class.

24 No scholarship, prize, or other honor shall be awarded in any course or department to any student who is reported in a grade below C in any other course or department.

Honors

25 Honors are awarded at the end of the second year, the end of the third year, and at the end of the course, and are known respectively as Sophomore Honors, Junior Honors, and Final Honors.

Sophomore Honors are awarded in classics, modern languages, English, and mathematics.

Junior Honors are awarded in classics, modern languages, English, mathematics, physics and chemistry.

Final Honors are awarded in classics, modern languages, English, mathematics, physics and chemistry, biology and botany, political science, and philosophy.

26 Each candidate for honors must give notice of the fact to the Dean not later than the beginning of the second term of the year in which he presents himself for examination. Substitutes for the courses specified below for honors may be allowed by the Faculty on petition, when good cause is shown.

Sophomore Honors

27 (*a*) CLASSICS—Candidates for Sophomore Honors in classics must have taken Greek and Latin of freshman and sophomore years (see 38 and 39), and must not have been classed below grade B in any of them. In addition they will be examined in reading Latin and Greek at sight, in Latin and Greek prose composition, and in some special subject connected with the Greek or Latin languages or literatures, the same to be announced on or before November 1 of each year.

(*b*) MODERN LANGUAGES—Candidates for Sophomore Honors in modern languages must have taken at least two courses in German, chosen from German of freshman and sophomore years, Goethe's Faust and History of German literature, and at least two courses in the Romance languages, from French of freshman and sophomore years. French rhetoric and French literature of the 17th century, elementary Italian and Italian prose and poetry of the 17th century, and elementary Spanish and Spanish prose and poetry (see 38, 39, 41), and must not have been classed below grade B in any of them. They will also be examined in reading French and German at sight, in French and German conversation, and in some special subject connected with either the French or German language or literature, the same to be announced on or before November 1 of each year.

(*c*) ENGLISH—Candidates for Sophomore Honors in English must not have been classed below grade B in rhetoric of freshman and sophomore years and literature of the sophomore year (see 38, 39). They will also be required to pass an examination upon such additional work as may be agreed upon from year to year by the Professor of Rhetoric, the Professor of Literature, and the Professor of English Language and Literature, the same to be announced on or before November 1 of each year.

(*d*) MATHEMATICS—Candidates for Sophomore Honors in mathematics must not have been classed below grade B in mathematics of freshman and sophomore years (see 38, 39); and will also be required to pass an examination on such additional work as may be announced by the Professor of Mathematics on or before November 1 of each year.

Junior Honors

28 Candidates for Junior Honors in classics, modern languages, English, or mathematics, respectively, must either have gained Sophomore Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Sophomore Honors therein; or have been reported in grade A in all of the courses taken during junior year in the department in which application for Honors is made.

29 (*a*) CLASSICS—Candidates for Junior Honors must have complied with the provisions of 28, and also have taken courses in the departments of Greek and Latin amounting to at least four hours a week in each, and must not have been classed below grade B in any of them. They will also be required to pass an examination on such additional matter as may be agreed upon by the

Professors of Greek and Latin, and announced on or before November 1 of each year.

(*b*) MODERN LANGUAGES—Candidates for Junior Honors must have complied with the provisions of **28**, and also have taken three additional courses in the Germanic and Romance languages, and must not have been classed below grade B in any of them. They will also be required to pass an examination on some special subject agreed upon by the Professors of the Germanic Languages and the Romance Languages, and announced on or before November 1 of each year.

(*c*) ENGLISH—Candidates for Junior Honors must have complied with the provisions of **28**, and also must have taken rhetoric of junior year (see **40**) and courses amounting to at least six hours a week from among those offered to juniors by the departments of Rhetoric, Literature, and English Language and Literature; and they must not have been classed below grade B in any of them. They will also be required to pass a special examination on some subject agreed upon by the Professors of Rhetoric, Literature, and English Language and Literature, and announced on or before November 1 of each year.

(*d*) MATHEMATICS—Candidates for Junior Honors must have complied with the provisions of **28**, and also have taken analytical geometry and projective geometry and mechanics with experiments (see **41**), and not have been classed below grade B in any of them. They will also be required to pass a special examination on some subject agreed upon by the Professors of Mathematics and Mechanics, and announced on or before November 1 of each year.

(*e*) PHYSICS AND CHEMISTRY—Candidates for Junior Honors must have taken inorganic chemistry (unless taken in sophomore year, in which case qualitative analysis must be substituted) and general physics, and must not have been classed below grade B in any of them. They will also be required to pass a special examination in some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before November 1 of each year.

(*f*) HISTORY—Candidates for Junior Honors must have taken history of junior year, and all the courses in history offered to juniors, and must not have been classed below grade B in any of them. They will also be required to pass a special examination in some subject announced by the Professor of History on or before November 1 of each year.

Final Honors

30 Candidates for Final Honors in classics, modern languages, English, mathematics, and physics and chemistry, respectively, must either have gained Junior Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Junior Honors therein; or have been reported in grade A in all the courses taken during senior year in the department in which application for Honors is made.

31 (*a*) CLASSICS—Candidates for Final Honors must have complied with the provisions of **30** and also have taken additional courses in the departments of Greek and Latin amounting to at least four hours a week in each, and must

not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Greek and Latin, and announced on or before November 1 preceding.

(*b*) MODERN LANGUAGES—Candidates for Final Honors must have complied with the provisions of 30, and also have taken three additional courses in the Germanic and Romance languages, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Germanic Languages and Romance Languages, and announced on or before November 1 preceding.

(*c*) ENGLISH—Candidates for Final Honors must have complied with the provisions of 30, and also have taken courses amounting to at least ten hours a week from among those offered to seniors by the departments of Rhetoric, Literature, and English Language and Literature; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Rhetoric, Literature, and English Language and Literature, and announced on or before November 1 preceding.

(*d*) MATHEMATICS—Candidates for Final Honors must have complied with the provisions of 30, and also have taken at least two courses from among those offered to seniors by the department of Mathematics; and at least one from among those offered by the department of Astronomy; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Mathematics and Astronomy, and announced on or before November 1 preceding.

(*e*) PHYSICS AND CHEMISTRY—Candidates for Final Honors must have complied with the provisions of 30, and also have taken at least two additional courses in physics, and at least two in chemistry, including laboratory work in both subjects; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before November 1 preceding.

(*f*) BIOLOGY AND BOTANY—Candidates for Final Honors must have taken at least one course in chemistry, one in botany, and three in biology, including laboratory work in all of the subjects; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Biology and Botany, and announced on or before November 1 preceding.

(*g*) HISTORY—Candidates for Final Honors must have complied with the provisions of 30, and also have taken at least three additional courses in history, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay containing not less than 5000 words on some subject announced by the Professor of History on or before November 1 preceding.

(*h*) Political Economy—Candidates for Final Honors must have taken economic history of Europe and America, and must not have been classed below grade B in either that or political economy of junior year. They must also have taken all the courses in political economy and finance offered to seniors, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Political Economy, and announced on or before November 1 preceding.

(*i*) Philosophy—Candidates for Final Honors must not have been classed below grade B in philosophy, logic and psychology, and must have taken at least three courses from among those offered to seniors by the departments of Philosophy, Ethics, and Psychology; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Philosophy, Ethics, and Psychology, and announced on or before November 1 preceding.

Graduation Thesis

32 Each candidate for graduation shall, after consultation with the instructor in charge of one of the courses in which he has studied or is studying, select for a thesis, or essay, some subject connected with the course, and, by December of the year preceding his graduation, shall submit the title of such thesis, or essay, for the President's approval. If the title be approved, the student shall write and submit to the President, by March 15, a thesis or essay of his own composition, which shall be judged by the head of the department in which the subject of discussion lies, primarily with regard to its substance; but no such thesis or essay will be accepted that is notably deficient in English composition. Each essay shall contain as appendix a list of all authorities that have been consulted. A student who fails to comply with the requirement of this rule, or whose essay is not accepted by the examiner, will not be recommended to the Trustees for graduation. No thesis will be accepted which contains less than 2000 words. The graduating theses must be written on firm, strong paper, eleven by eight and one-half inches in size, and a space of one and one-half inches on the inner margin left free from writing; they are retained by the College.

33 Special students may take any course, prescribed or elective, on the approval in writing of the Dean, to whom they must apply for admission.

34 The following regulations are obligatory upon all students:

(*a*) No prescribed course can be taken as an elective.

(*b*) No optional course can be taken except by permission of the Dean, nor can be counted for a degree under any circumstances.

(*c*) Every student must have taken one course in natural science including laboratory work, before graduation.

(*d*) Courses in laboratory work or in drawing can be counted for only one half the number of hours actually occupied.

(*e*) No student can take more than four hours (except in laboratory work or in drawing) assigned to the same day, except by permission of the Dean.

(*f*) No student can take more than six hours in any one department except by permission of the Dean.

(*g*) All elective courses are taken subject to the conditions imposed by the head of the department.

(*h*) Any student may be excluded from an elective course on the report of the instructor to the Dean that this is advisable; and the student shall then be required to elect some other equivalent course.

35 No changes in elective courses can be made, except by permission of the Dean, to whom application must be made in writing with a statement of reasons.

36 Students are required to give notice to the Dean of their choice of electives, upon blanks provided at the Dean's office, on or before September 5. They must avoid conflict of subjects at the same hour, and for that purpose should consult the hour-scheme. Students are advised to make their choice upon a settled plan, consistent with their aims in education, and especially to consult with their instructors in the subjects chosen.

37 Students are expected to attend upon the Wednesday preceding the first Monday in October, which in 1895 falls on Wednesday, October 2, for registration and the payment of matriculation fees. Failure on the part of any student to present himself at the first hour of any elective course may be regarded as sufficient reason to exclude him therefrom; and every student who is late in entering his elective courses will be charged with absences equal in number with the hours missed.

COURSES OF INSTRUCTION

Freshman and Sophomore Classes

The studies of the freshman class occupy fifteen hours a week and are all obligatory, except that a freshman must choose French or German (that one of them upon which he was examined for admission), but is not required to take both. The studies of the sophomore class require sixteen hours a week, and are all obligatory; a student may, however, substitute chemistry, three hours a week, for any language, ancient or modern, except English.

Distribution of subjects and hours in the freshman and sophomore years:

38 In the freshman year:

	Hours a week.		Hours a week.
Greek	3	Mathematics	3
Latin	3	French or German	3
Rhetoric	3		

39 In the sophomore year:

	Hours a week.		Hours a week.
Greek	3	Mathematics	2
Latin	3	History	2
Literature	3	French or German	3

Chemistry (in place of Greek, Latin, French, or German), 3 hours.

A freshman or a sophomore who shall pass satisfactory examinations in the French and German of the first and second years, may substitute an elective

course in French, German, Italian or Spanish, on the recommendation of the head of the department.

Junior Class

For the studies of the junior class fifteen hours a week are required ; of these, four are for obligatory studies and eleven for elective courses.

40 The required studies are :

	Hours a week.
History and Political Economy	2
Logic and Psychology	2

Written work in English, under the direction of the Professor of Rhetoric, is required of each junior.

41 The elective courses open to the juniors are :

	Hours a week.
Astronomy	2
Biology, Elementary, with laboratory work	3
Botany, Elementary, with laboratory work	3
Botany, with laboratory work	2
Chemistry, Inorganic, with laboratory work	3
Chemistry, Applied Chemistry	3
Geology, General	2
German, Goethe's Faust	2
German, History of German Literature	2
German, Select Historical Prose	2
German, History of German Language	2
German, Middle High German	2
English, Laws of Prose Composition	2
English, Shakspere, Language, Versification, etc.	2
English, Spenser and the Elizabethan Poets	1
English, Milton and the Caroline Poets	1
English, 19th Century Literature	2
Greek, Sophocles and Thucydides	3
Greek, Æschylus and Isocrates	2
Greek, Lectures on the Greek Drama	1
Greek, Lectures on Greek Art	1
Language, General Introduction	3
Latin, Juvenal and Cicero de Officiis	2
Latin, Terence, Andria and Phormio, and Lucretius de Rerum Natura	2
Mathematics, Analytical Geometry	3
Mathematics, Projective Geometry	2
Mechanics, with experiments	2
Physics, Elementary, with laboratory work	5
Physics, Elementary — minor course—with laboratory work	3
Rhetoric, Lectures and Essays	2
Romance Languages :	
French, French Rhetoric	3
French, French Literature in the 17th Century	3
Italian, Elementary	3
Italian, Prose and Poetry of the 16th Century	3
Italian, Prose and Poetry of the 14th Century	3
Spanish, Elementary	3
Spanish, Modern Prose and Poetry	3
Spanish, Literature of the Golden Age	3
Semitic Languages :	
Hebrew, Biblical Hebrew, Elementary Course	2

Senior Class

42 Seniors are required to take fifteen hours of elective courses, the following being open to them :

English, Laws of Prose Composition in English.
English, Shakspere, Language, Versification, etc.
English, Chaucer, Language, Versification, etc.
English, The Poetry of Tennyson, Browning, and Matthew Arnold.
English, Anglo-Saxon and English Historical Grammar.
English, Anglo-Saxon Poetry and Early English.
English, Spenser and Milton.
English, 19th Century Literature.
English, American Literature.
English, English Versification.

Germanic Languages :

German, Goethe's Faust.
German, History of German Literature.
German, Selected Historical Prose.
German, History of the German Language.
German, Danish and Norwegian Literature.

Greek, Æschylus and Isocrates.
Greek, Lectures on the Greek Drama.
Greek, Pindar and Demosthenes.
Greek, Lectures on Elegiac, Iambic, and Melic Poets.
Greek, New Testament, Epistles.
Greek, New Testament, Gospels and Acts.
Greek, Greek Art.
Greek, Topography, Mythology and Monuments of Ancient Greece.
Language, General Introduction.

Latin, Juvenal and Cicero de Officiis.
Latin, Lucretius.
Latin, Roman History, Tacitus, Suetonius, and Velleius Paterculus.
Latin, Plautus.
Latin, Horace, rapid reading of all the Poems.

Literature, History and Theory of Criticism.
Literature, History of Modern Fiction.
Literature, Epochs of the Drama.

Oriental Languages :

Sanskrit, Elementary.
Semitic, Biblical Hebrew.
Semitic, Semitic Epigraphy.
Semitic, Arabic.

Pedagogy, Principles of Teaching.

Philosophy, Ethics.
Philosophy, General History of Philosophy.
Philosophy, Philosophy of Kant and his Successors.
Philosophy, Experimental Psychology.

Romance Languages :

French, French Literature in the 17th Century.
French, French Literature in the 18th Century.
French, Victor Hugo.
Spanish, Composition, Modern Prose and Poetry.

Constitutional History of Europe and the United States.
Constitutional History of England.
History of Political Theories.
Political Economy.

- Astronomy, General.
- Astronomy, Practical Astronomy and Navigation.
- Biology, Elementary, with laboratory work.
- Biology, General Zoölogy.
- Botany, Elementary with laboratory work.
- Botany, General Botany.
- Botany, Economic Botany.
- Chemistry, Inorganic, with laboratory work.
- Chemistry, Applied Chemistry.
- Chemistry, Qualitative Analysis, with laboratory work.
- Geology, General Geology.
- Geology, Economic Geology.
- Mathematics, Determinants and Modern Geometry.
- Mathematics, Differential and Integral Calculus.
- Mechanics with experiments.
- Physics, Elementary—major course—with laboratory work.
- Physics, Elementary Physics—minor course—with laboratory work.
- Physics, Light and Heat.
- Physics, Higher Physics.

In addition to the above, first-year courses in the School of Law, School of Mines, and the College of Physicians and Surgeons are open to them; and such as may desire to do so can prepare themselves for advanced standing in those schools by electing these first-year courses as a whole or in part, and counting them for the degree of Bachelor of Arts.

43 For details as to the several courses enumerated above, see statements of the departments of instruction and special circulars of Courses in the School of Arts.

REGISTER OF STUDENTS

SENIOR CLASS

NAME	RESIDENCE	CITY ADDRESS
Francis Eugene Bauch	*Brooklyn, N. Y.*	(1059 Greene ave.)
George Philip Bryant	*New York City*	44 West 9th st.
Charles Frederick Buckley	*Brooklyn, N. Y.*	(802 Carroll st.)
William L. Cahn	*New York City*	50 East 72d st.
Philetus Mortimer Capen	*New York City*	48 East 63d st.
Lewis Nathaniel Chase	*Riverside, Cal.*	142 West 44th st.
Roger Lowis Conant	*Newark, N. J.*	21 Park pl.
John Hamilton Potter Conover	*South Amboy, N. J.*	166 West 55th st.
Frederick Coykendall	*Rondout, N. Y.*	233 West 45th st.
Frederick Morse Cutler	*New York City*	2109 Madison ave.
Schuyler Emerson Day	*New York City*	13 West 63d st.
Henry William Egner, Jr.	*Newark, N. J.*	(1015 Broad st.)
William Sanford Evans	*New York City*	4 West 33d st.
John Ewen	*Spuyten Duyvil, N. Y.*	
John Driscoll FitzGerald II.	*Newark, N. J.*	(57 Liberty st.)
Clarence Randolph Freeman	*New York City*	123 East 74th st.
William Oscar Gennert	*Greenville, N. J.*	24 and 26 East 13th st.
George Balthasar Germann	*Brooklyn, N. Y.*	(90 Norman ave.)
Felix Mortimer Gernsheim	*New York City*	1 East 44th st.
Henry Eugene Houston	*Richmond Hill, N. Y.*	
Victor William Hungerford	*New York City*	121 West 69th st.
Conrad Saxe Keyes	*Brooklyn, N. Y.*	(27 Monroe st.)
Maulsby Kimball	*Kenosha, Wis.*	38 West 34th st.
Arthur Kline Kuhn	*New York City*	32 West 84th st.
Edward Lazansky	*Brooklyn, N. Y.*	(224 Carleton ave.)
William Thomas Mason	*New York City*	37 West 48th st.
George Frederick Middendorf, Jr.	*Brooklyn, N. Y.*	(90 Schenck ave.)
Rudolph Neeser	*New York City*	2 West 33d st.
Walter Stephen Newell	*New York City*	20 East 127th st.
Louis Hasbrouck Newkirk	*Monticello, N. Y.*	38 West 34th st.
Charles Walton Ogden, Jr.	*New York City*	31 West 20th st.
Edward Codman Parish	*New York City*	1 West 19th st.
Henry Berry Pogson	*New Brunswick, N. J.*	2220 Vyse ave.
Frank Judson Pope	*Elizabeth, N. J.*	12 West 31st st.

NAME	RESIDENCE	CITY ADDRESS
William Howe Ripley	*New York City*	605 Lexington ave.
James Naumburg Rosenberg	*New York City*	122 West 87th st.
Issak Max Rubino	*New York City*	24 East 106th st.
Frederic White Shepard	*Brooklyn, N. Y.*	(81 Columbia Heights)
Frederick Herbert Sill	*New York City*	243 West 45th st.
Joseph Percy Smyth, Jr.	*Brooklyn, N. Y.*	(851 President st.)
Joel Elias Spingarn	*New York City*	118 East 58th st.
Clarence Storm	*New York City*	41 West 81st st.
Joseph Suydam Stout, Jr.	*New York City*	35 East 67th st.
William Dana Street	*Brooklyn, N. Y.*	(173 Macon st.)
David Houghtaling Taylor	*New York City*	16 East 56th st.
Stephen Fraser Thayer	*Yonkers, N. Y.*	(75 Hawthorne ave.)
Frederic Oakman Virgin	*New York City*	16 East 125th st.
Richmond Weed	*Flushing, N. Y.*	(30 Jamaica ave.)
David Everett Wheeler	*New York City*	71st st. and Park ave.

Seniors..... 49

JUNIOR CLASS

Charles Siedler Adams	*Brooklyn, N. Y.*	(213 Hancock st.)
Carl Lucas Alsberg	*New York City*	169 East 116th st.
Rogers Hammond Bacon	*New York City*	22 West 10th st.
Edwin Atkinson Bayles	*Orange, N. J.*	(408 Main st.)
Claude Selwyn Beckwith	*Paterson, N. J.*	
William Fenwick Beekman	*New York City*	119 East 18th st.
Edwin Beer	*New York City*	38 West 77th st.
Herbert Doty Brown	*New York City*	9 West 129th st.
Granville Ingraham Burr	*New York City*	513 West 144th st.
Guy Wetmore Carryl	*New York City*	33 West 42d st.
William Samuel Cherry	*New York City*	244 West 71st st.
David Cohn	*Paterson, N. J.*	(112 Ellison st.)
Maurice Cohn	*Paterson, N. J.*	(112 Ellison st.)
Charles Dupont Coudert	*New York City*	36 West 48th st.
Edward Hamilton Daly	*New York City*	19 East 62d st.
Henry Louis Austin Fick	*New York City*	44 Sixth ave.
Hamilton Fish, Jr.	*New York City*	53 Irving pl.
Everett Willoughby Gould	*Watertown, N. Y.*	
William Henry Hays	*New York City*	13 East 54th st.
John Duer Irving	*New Brighton, S. I.*	
Edward Thos. Johnston	*New York City*	353 Third ave.
Emil Alexander Charles Keppler	*New York City*	130 West 58th st.
Walter Colouzzi Kretz	*New York City*	149 West 12th st.
Alfred Louis Kroeber	*New York City*	316 West 89th st.
Irving Lehman	*New York City*	5 East 62d st.
Albert Ralph Lesinsky	*New York City*	25 East 72d st.
Julian Clarence Levi	*New York City*	137 West 81st st.

NAME	RESIDENCE	CITY ADDRESS
Frederick Montgomery Livingston	*Brooklyn, N. Y.*	(370 Greene ave.)
Robert Glenn McCrea	*Brooklyn, N. Y.*	(533 Franklin ave.)
Robert Austen McCulloch	*New Brighton, S. I.*	
William Milwitzky	*Newark, N. J.*	
Edward Elbert Mitchell	*Flushing, N. Y.*	74 Leonard st.
James Macdonald Mitchell	*Flushing, N. Y.*	74 Leonard st.
Charles Gustave Mourraille	*New York City*	74 West 12th st.
Asa Warren Parker, Jr.	*Brooklyn, N. Y.*	(149 Henry st.)
Frederick Augustus Peters	*New York City*	1046 Stebbins ave.
William Popper	*Brooklyn, N. Y.*	(60½ Bainbridge st.)
Joseph Meyer Proskauer	*Mobile, Ala.*	116 West 136th st.
Franklin Edwin Reese	*Westfield, N. J.*	
Allan Conn Rowe	*Brooklyn, N. Y.*	(550 Washington ave.)
Sidney Samuel Schwab	*New York City*	8 East 74th st.
Herman Francis Senftner	*New York City*	108 West 136th st.
Samuel Swayze Seward, Jr.	*New York City*	185 Lexington ave.
Raymond Gold Shipman	*New York City*	213 West 71st st.
John Hebard Snyder	*West Hoboken, N. J.*	(121 Palisade ave.)
Faneuil Dunkin Stein	*New York City*	30 West 15th st.
John Tilly, Jr.	*Westchester, N. Y.*	
Carl Manfred Uhl	*New York City*	113 East 60th st.
John Alfred Valentine	*Newtown, N. J.*	
Richard Weil	*New York City*	109 West 77th st.
James Perry Warden	*Hastings-on-Hudson, N. Y.*	

Juniors.....51

SOPHOMORE CLASS

Ellery Oswald Anderson	*New York City*	132 East 35th st.
Richard Perrin Appleton	*Nutley, N. J.*	
John Richard Atwill	*Kansas City, Mo.*	238 West 11th st.
Woodward Babcock	*Far Rockaway, N. Y.*	21 West 49th st.
Philip Bissell	*New York City*	142 West 44th st.
Theodore Lawrence Bogert	*Flushing, N. Y.*	56 East 49th st.
Arthur Bookman	*New York City*	9 East 62d st.
Charles William Boote	*Yonkers, N. Y.*	(128 Webster ave.)
Armitage Bradley	*New York City*	115 West 91st st.
Hans Von Briesen	*New York City*	4 East 48th st
Philip Ernest Brodt	*Geneseo, N. Y.*	201 West 54th st.
Frank Hoag Brooks	*New York City*	142 West 103d st.
Eugene Carroll Brown	*Brooklyn, N. Y.*	(976 Kent ave.)
William Joseph Clarke	*New York City*	148 East 45th st.
Frederick Hassard Cluff	*Brooklyn, N. Y.*	(220 Garfield pl.)
John Hull Deming	*Williamsbridge, N. Y.*	
Francis Harold Dike	*New York City*	159 West 129th st.
Walter Strong Edwards	*Greenwich, Conn.*	

NAME	RESIDENCE	CITY ADDRESS
Francis Bertram Elgas	*New York City*	121 West 87th st.
Charles Henry Ellard	*Great Neck, N. Y.*	
William Henry Fry	*Brooklyn, N. Y.*	(319 9th st.)
Seymour Keyes Fuller	*Brooklyn, N. Y.*	(77 Hanson pl.)
George Dudley Gregory	*Washington, D.C.*	58 West 35th st.
Arthur Benedict Griffin	*New York City*	882 St. Nicholas ave.
William Bonn Gunton	*New York City*	225 East 17th st.
Robert Hurtin Halsey	*Astoria, N. Y.*	(1000 Boulevard)
Edgar Arnold Hellman	*New York City*	200 West 44th st.
Walter Leon Hess	*New York City*	307 West 86th st.
Charles Knapp Hitchcock, Jr.	*Bayonne, N. J.*	
Bernard Michel Kaplan	*New York City*	348 East 65th st.
Charles Nelson Kent, Jr.	*Merrick, N. Y.*	10 Spruce st.
Richard Peabody Kent	*Merrick, N. Y.*	10 Spruce st.
Arthur Lee	*Brooklyn, N. Y.*	(191 Gates ave.)
Stephen Lindeufelser	*New York City*	391 East 10th st.
John Harry Lyon	*Milburn, N. J.*	21 Park Row
Arthur Lockett Marvin	*New York City*	332 West 58th st.
Burdette Kellogg Marvin	*New York City*	332 West 58th st.
Edward Gibbs Merrill	*New York City*	147 West 12th st.
Nathan Olcott Petty	*Riverhead, N. Y.*	72 East 61st st.
John Hill Prentice	*Brooklyn, N. Y.*	(170 Columbia Heights)
Reginald William Pressprich	*New York City*	416 West 146th st.
Albert William Putnam	*New York City*	16 Manhattan Square, S.
Isidorus Ross	*New York City*	2078 Seventh ave.
Charles Chapin Sargent, Jr.	*New York City*	29 East 73d st.
George Washington Senftner	*New York City*	108 West 136th st.
Robert Willis Shearman	*Long Island City, N. Y.*	(398 Van Pelt st.)
Walter Conwell Shoup	*New York City*	120 West 82d st.
Oliver Smith	*New York City*	460 West 44th st.
Philip Smith	*Scranton, Penn.*	534 West 45th st.
Isaac Harold Stern	*New York City*	55 West 50th st.
Ernest Wm. Stratmann	*Brooklyn, N. Y.*	(722 Fourth ave.)
Morris Lincoln Strauss	*College Point, N. Y.*	
Edwin Platt Tanner	*Paterson, N. J.*	(72 Pearl st.)
George Wilson Wharton	*Brooklyn, N. Y.*	(98 St. Mark's ave.)
Charles Frederic Wheaton	*Yonkers, N. Y.*	(74 Main st.)
William Walter Willis	*Brooklyn, N. Y.*	500 Clinton ave.
Alexander Henry William Zerban	*New York City*	334 Lenox ave.

Sophomores.....57

FRESHMAN CLASS

George Alonzo Acken	*Haworth, N. J.*	2 West 14th st.
Julius Alsberg	*New York City*	169 East 116th st.
Morton Knight Averill	*New York City*	7 West 120th st.
Charles Clinton Burke, Jr.	*New York City*	17 East 55th st.

NAME	RESIDENCE	CITY ADDRESS
Lucius Constant Bulkley	*New York City*	4 East 37th st.
Howard Masten Cannon	*Brooklyn, N. Y.*	(670 Macon st.)
Arthur Osgood Choate	*New York City*	85 Madison ave.
Walter Nicholas Clapp	*Hempstead, N. Y.*	
William Williams Comstock	*New York City*	208 West 69th st.
Clarence Arthur Comstock	*New York City*	100 East 17th st.
Harry Randel Cook	*Orange, N. J.*	(Heywood ave.)
Frank Holmes Curry	*New Brighton, N. Y.*	(Fort pl.)
Joseph Morris Daggett	*New York City*	1296 Madison ave.
Sumner Deane	*New York City*	48 West 59th st.
George Edward Henry de Braekeleer	*New York City*	121 West 80th st.
John Woodridge Demarest	*Queens, N. Y.*	
Frank Depew	*New York City*	18 East 125th st.
Edward Livingston de Rose	*New York City*	117 Madison ave.
Arthur Brill de Young	*New York City*	805 Lexington ave.
Dudley James Betts Dupignac	*New York City*	60 West 71st st.
Charles Hebard Edwards	*Greenwich, Conn.*	
Lewis David Einstein	*New York City*	39 West 57th st.
Leo Fishel	*Babylon, N. Y.*	
Jay Stanley Foster	*New York City*	54 Irving pl.
George Greer	*Rye, N. Y.*	
Henry Louis Haas	*New York City*	383 West End ave.
Frank Charles Paul Hertzog	*Newark, N. J.*	
Stephen Higginson, Jr.	*New York City*	222 Fifth ave.
George Gallagher Hopkins, Jr.	*Brooklyn, N. Y.*	(350 Washington ave.)
Darwin Shaw Hudson	*Astoria, N. Y.*	(157 Franklin st.)
Edwin Taylor Iglehart	*New York City*	106 East 86th st.
Ernest Iselin	*New York City*	9 East 26th st.
George Richard Jacobus	*Yonkers, N. Y.*	
Frederick Paul Keppel	*New York City*	239 East 17th st.
Alfred Julius Kohn	*New York City*	35 West 72d st.
Edwin La Roche	*Brooklyn, N. Y.*	(753A Union st.)
Maxwell Lester	*Brooklyn, N. Y.*	(69 First pl.)
Ernest Gustav Lemcke	*Astoria, N. Y.*	(103 Ramsen st.)
Renne Martin, Jr.	*So. Orange, N. J.*	
Alfred Jewett McLean	*New York City*	31 East 126th st.
Walter Bertrand Merriam	*New York City*	143 West 43d st.
John Fulton Berrien Mitchell, Jr.	*Flushing, N. Y.*	
Albert S. Morrow	*New York City*	66 West 40th st.
Stuyvesant F. Morris, Jr.	*New York City*	16 East 30th st.
Robert King Morse	*Nyack, N. Y.*	
Ferdinand Van Sicken Parr	*Brooklyn, N. Y.*	(146 Wilson st.)
Robert Low Pierrepont	*Brooklyn, N. Y.*	(216 Columbia Heights)
Ralph Brouwer Pomeroy	*Nyack-on-Hudson, N. Y.*	
Henry Thomas Randall	*Summit, N. J.*	
Gerard Roberts	*Brooklyn, N. Y.*	(59 Seventh ave.)

NAME	RESIDENCE	CITY ADDRESS
Halsey Sayles	*New York City*	33 West 73d st.
Jacob Smith Schlussel	*New York City*	37 West 74th st.
Henry William Schwartz	*Bloomfield, N. J.*	(189 Midland ave.)
Eugene Edward Spiegelberg	*New York City*	156 West 44th st.
Nathan Stern	*New York City*	448 West 43d st.
Randall Hoyt Stern	*New York City*	252 West 131st st.
George Henry Striker	*New York City*	84 Lexington ave.
William Bittle Symmes, 3d	*New York City*	Hotel Winthrop
Alvan Alonzo Tenney	*Brooklyn, N. Y.*	(852 Bedford ave.)
Webster Wagner	*Brooklyn, N. Y.*	(64 Macon st.)
Jesse Watson, Jr.	*Brooklyn, N. Y.*	(263 Hancock st.)
William Minter Weaver, Jr.	*New York City*	78 West 54th st.
William Rogers Westerfield	*New York City*	109 West 123d st.
Faneuil Suydam Weisse	*New York City*	46 West 20th st.
William Winans	*Asbury Park, N. J.*	
Samuel Copp Worthen	*Corinna, Me.*	311 West 44th st.
Franklin Zeiger	*Montclair, N. J.*	(138 Park st.)

Freshmen.....67

SPECIAL STUDENTS NOT CANDIDATES FOR A DEGREE

Hugh White Adams, Jr.	*Yonkers, N. Y.*	
Milton David Bachrach	*New York City*	1903 Madison ave.
Nathan Isaac Bijur	*New York City*	46 East 73d st.
Samuel Henry Bijur	*New York City*	46 East 73d st.
William Blumdell, Jr.	*Paterson, N. J.*	
Franklin Bullwinkle	*Brooklyn, N. Y.*	(433 Franklin ave.)
Ernest Warren Davenport	*Yonkers, N. Y.*	
Eugene Willis Denton	*New Hyde Park, N. Y.*	
Clarence Henry Eckerson	*Marlboro, N. Y.*	
Addison Ely, Jr.	*Rutherford, N. J.*	
Louis Fitzgerald	*New York City*	253 Lexington ave.
Arthur Romeyn Gray	*New York City*	47 West 48th st.
Charles Stuart Hungerford	*New York City*	121 West 69th st.
Edward Lasker	*Galveston, Texas*	120 East 85th st.
George Walter Lieber	*New York City*	306 West 45th st.
William Goadby Loew	*New York City*	25 West 57th st.
Aaron Wager Maddox	*Brooklyn, N. Y.*	(669½ Quincy st.)
Albert Oscar Miller, Jr.	*Passaic, N. J.*	
Leonard J. Obermier	*New York City*	155 East 55th st.
Henry Evelyn Pierrepont, Jr.	*Brooklyn, N. Y.*	(216 Columbia Heights)
Arthur Augustus Seymour Powers	*New York City*	264 West 67th st.
Ernest Irving Price	*New Rochelle, N. Y.*	
Gulian V. P. Richards	*New York City*	14 East 11th st.
William Seward Shanahan	*Brooklyn, N. Y.*	(17 Prospect pl.)
Herbert Amzi Sigler	*Montclair, N. J.*	

NAME	RESIDENCE	CITY ADDRESS
Abram Richard Stern	*New York City*	55 West 50th st.
Edwin Blanchard Woodruff	*Delhi, N. Y.*	244 West 42d st.
Total		27

STUDENTS OF THE LAW SCHOOL PURSUING STUDIES IN THE SCHOOL OF ARTS

Major W. Barber	*Brooklyn, N. Y.*	(181 McDonough st.)
Arthur Knox	*New York City*	472 Mott ave.
William R. A. Koehl	*New York City*	980 Sixth ave.
Adolph A. Rubino	*New York City*	1698 Lexington ave.
Joseph Thomas Ryan	*New York City*	311 West 50th st.
Henry Schoenherr, Jr.	*Brooklyn, N. Y.*	(150 Wythe ave.)
Dudley D. Sicher	*New York City*	54 East 65th st.
Robert William Thompson, Jr.	*New York City*	229 West 97th st.
William Bell Wait, Jr.	*New York City*	412 Ninth ave.
Total		9

STUDENTS OF THE SCHOOL OF POLITICAL SCIENCE PURSUING STUDIES IN THE SCHOOL OF ARTS

Milton Weil	*New York City*	35 West 74th st.
Joseph Alexander Wright	*Columbus, Ind.*	106 East 55th st.
Total		2

STUDENTS OF THE SCHOOL OF PURE SCIENCE PURSUING STUDIES IN THE SCHOOL OF ARTS

Charles T. Rittenhouse	*New York City*	247 West 138th st.
Total		1

STUDENTS IN THE COLLEGIATE COURSE FOR WOMEN

Elizabeth Frances Nammack	*New York City*	344 Madison ave.
Total		1

SUMMARY

Seniors	49
Juniors	51
Sophomores	57
Freshmen	67
Special Students	27
Students from the School of Law	9
Students from the School of Political Science	2
Students from the School of Pure Science	1
Students in the Collegiate Course for Women	1
Total	264

HONORS AND PRIZES, 1894

Prize of the Alumni Association

To the most faithful and deserving student of the Graduating Class
Prize of $50.....FREDERIC LUDLOW LUQUEER

Chanler Historical Prize

WALTER HENRY LIEBMANN

Honor Men of the Year 1894

SENIOR CLASS

Modern Languages
LAWRENCE ATTERBURY

English
HERBERT MCLEOD JOHNSTON

Political Economy
CLARENCE BISHOP SMITH

JUNIOR CLASS

English
JOEL ELIAS SPINGARN

SOPHOMORE CLASS

Classics
ROBERT GLENN MCCREA

Modern Languages
WALTER COLOUZZI KRETZ
FRANCIS EUGENE BAUCH

English
ROBERT GLENN MCCREA

Mathematics
JOSEPH M. PROSKAUER

SCHOOL OF LAW

Officers of the Faculty

WILLIAM A. KEENER, A.M., LL.B.....*Dean, and Ex-Officio Member of the University Council*
GEORGE W. KIRCHWEY, A.B.....*Secretary*
FRANCIS M. BURDICK, A.M., LL.B.....*Elected Delegate to the University Council*

Faculty

SETH LOW, LL.D., *President*

WILLIAM A. KEENER, A.M., LL.B., *Kent Professor of Law, and Dean*
GEORGE M. CUMMING, A.B., *Professor of Law*
FRANCIS M. BURDICK, A.M., LL.B., *Dwight Professor of Law*
GEORGE W. KIRCHWEY, A.B., *Professor of Law*
HENRY P. STARBUCK, A.B., LL.B., *Professor of Law*
GEORGE F. CANFIELD, A.B. LL.B., *Professor of Law*

From the Faculty of Political Science*

JOHN W. BURGESS, Ph.D., LL.D., *Professor of History, Political Science, and Constitutional Law*
MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*
FRANK J. GOODNOW, A.M., LL.B., *Professor of Administrative Law*
JOHN B. MOORE, A.B., *Hamilton Fish Professsor of International Law and Diplomacy*

Lecturers

JOHN ORDRONAUX, LL.D., *Professor of Medical Jurisprudence*
CHARLES T. TERRY, A.B., LL.B., *Lecturer on Procedure in Equity and under the Code*

Prize Lecturers

RALPH S. ROUNDS, A.B., LL.B.
DAVID BANDLER, A.B., LL.B.

* Some of the courses leading to the degree of Bachelor of Laws conferred on the recommendation of the Faculty of Law, are conducted by the above-named Professors in the Faculty of Political Science.

PURPOSES OF THE SCHOOL

The design of the School is to prepare students for practice in any State of the Union, and in furtherance of this object the endeavor is made to give a thorough practical and scientific education in the principles of the law included in the following subdivisions:

First.—The COMMON LAW, in its development, and as it exists to-day in the United States, together with such statutory modifications as are common to the several States.

Second.—EQUITY, in its development, and as it exists to-day in the United States.

Third.—The LAW of the STATE of NEW YORK, including PRACTICE and PLEADING under the CODE of CIVIL PROCEDURE, and the doctrines of substantive law peculiar to that State in regard to Trusts of Real and Personal Property, Powers Perpetuities, Charitable Bequests, Accumulations, Limitation of Future Estates, Descent and Distribution, Mortgages, and Contracts.

Fourth.—The PUBLIC LAW of the UNITED STATES, and the principal EUROPEAN COUNTRIES, including CONSTITUTIONAL LAW, ADMINISTRATIVE LAW, and INTERNATIONAL LAW.

Fifth.—COMPARATIVE JURISPRUDENCE, ROMAN LAW, and the HISTORY of EUROPEAN LAW.

COURSE OF INSTRUCTION

The course of instruction leading to the degree of Bachelor of Laws covers a minimum period of three years, in which there are offered sixty-one hours of instruction per week throughout the year. In the first year are offered thirteen hours of instruction per week; in the second year twenty-four hours of instruction per week; in the third year twenty-four hours of instruction per week.

The degree of Bachelor of Laws is conferred only upon students who have passed satisfactory examinations in courses covering a total of thirty-nine hours.

To obtain this degree in three years the student must, ordinarily, take courses covering thirteen hours per week in the first year, fourteen in the second, and twelve in the third.

While no student will be allowed, without the consent of the Faculty, to present himself for examination in any one year in subjects covering more than the number of hours above named, any one desiring to prolong the period of study for the degree of LL.B. beyond three years, will be permitted to reduce thereby the amount of work in any one year necessary for the degree. The Faculty would strongly advise students who have not had an opportunity of thoroughly studying History, Economics, and Finance, so to prolong their course of study in order that they may avail themselves of the opportunity offered in the School of Political Science for studying these subjects. For the courses offered by the University Faculty of Political Science in these subjects see pages 49 and 71.

The work selected by a student for a degree in law is subject in every case to the approval of the Dean.

First Year

Required

ELEMENTS OF JURISPRUDENCE—2 hours per week. Professor KEENER

The study of Jurisprudence is begun in October.

EQUITY—2 hours per week. Professor KEENER

The course in Equity is not begun until that on Jurisprudence is completed, and not until the class has considered that portion of the Law of Torts dealing with the violation of property rights, and it is confined to a consideration of the nature of Equity, and of the jurisdiction of Equity over Torts.

CONTRACTS—2 hours per week. Professor CUMMING

The instruction in Contracts in both the first and second years is confined to a consideration of pure contracts, or the principles involved in the formation, performance, and discharge of contract obligations.

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

TORTS—2 hours per week. Professor BURDICK

CRIMINAL LAW AND PROCEDURE—2 hours per week. Professor MOORE

In this course will also be considered Extradition and the Conflict of Penal Laws.

LAW OF PERSONS AND DOMESTIC RELATIONS—1 hour per week. Professor STARBUCK

In the Law of Persons and Domestic Relations the instruction is given twice a week from October to February. When not otherwise stated, the course of instruction in any given subject extends through the year.

COMMON LAW PLEADING AND PRACTICE—1 hour per week. Professor STARBUCK

In Common Law Pleading and Practice the instruction is given twice a week from February to June. When not otherwise stated, the course of instruction in any given subject extends through the year.

The instruction in Contracts is based on Keener's selections on Contracts; in Real and Personal Property, on Digby's History of the Law of Real Property and Gray's Cases on Property; in Criminal Law and Procedure, on Beale's Cases on Criminal Law; in Torts, on Pollock on Torts and Burdick's Cases on Torts; in the Law of Persons and Domestic Relations, on Ewell's Cases on Domestic Relations (student's edition); in Common Law Pleading and Practice, on Stephen on Pleading and on Ames's Cases on Pleading; in Elements of Jurisprudence, on Markby's Elements of Law; in Equity, on Keener's Cases on Equity.

Second Year

CONTRACTS AND QUASI-CONTRACTS—3 hours per week. Professors CUMMING and STARBUCK

Quasi-Contracts is not taken up until the subject of Contracts begun in the first year is finished. In the course on Quasi-Contracts are considered the rights and obligations arising independently of the doctrines of either Tort or Contract, as, for example, the recovery of money paid under duress, or under compulsion of law, or where the consideration for the payment has failed because of mistake or otherwise; the doctrine of waiver of tort; the right to recover independently of contract for services rendered, and the right to recover for benefits conferred under an unenforceable contract.

EQUITY—2 hours per week—Professor KEENER

The consideration of the jurisdiction of Equity over Torts begun in the first year is finished, and the study of the law of Trusts of Real and Personal Property is begun.

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

ADMINISTRATIVE LAW—2 hours per week. Professor GOODNOW

In this course are considered the organization of administrative authorities; their methods of action, and the control exercised over them by the legislature and the courts, particularly through the issue of the writs of mandamus, prohibition, certiorari, habeas corpus, and quo warranto.

AGENCY—2 hours per week. Professor CANFIELD

BAILMENTS AND CARRIERS—2 hours per week. Mr. ROUNDS

COMPARATIVE CONSTITUTIONAL LAW—2 hours per week. Professor BURGESS

The instruction in Comparative Constitutional Law is given three times a week from December to May. Except where otherwise stated the course of instruction in any given subject extends through the year.

HISTORY OF EUROPEAN LAW—2 hours per week. Professor SMITH

INSTITUTES OF ROMAN LAW—2 hours per week. Professor SMITH

SALES OF PERSONAL PROPERTY—2 hours per week. Professor BURDICK

CODE PRACTICE—1 hour per week. Mr. TERRY

In the course on Code Practice students are required to prepare the principal papers required in practice under the code. The instruction in Code Practice is given twice a week from February to June. Except where otherwise stated the course of instruction in any given subject extends through the year.

EQUITY PLEADING AND PRACTICE—1 hour per week. Mr. TERRY

The instruction therein is given twice a week from October to February, and is given with special reference to the Equity Procedure of the Federal Courts of the United States, students being required to prepare the pleadings and other papers incident to a suit in equity.

INSURANCE—1 hour per week. Mr. ROUNDS

The instruction in Insurance is given twice a week from February to June. Except where otherwise stated the course of instruction in any given subject extends through the year.

Optional *

MEDICAL JURISPRUDENCE—3 hours per week. Professor ORDRONAUX

The instruction in Medical Jurisprudence ends in December.

The required work for the degree in the second year is fourteen (14) hours a week.

The instruction in Contracts and Quasi-Contracts is based on Keener's Selections on Contracts and Keener's Cases on Quasi-Contracts; in Equity, on Ames's Cases on Trusts; in Real and Personal Property, on Gray's Cases on Property; in Insurance, on Richards' Treatise and Select Cases on Insurance.

Third Year

CODE PLEADING AND PRACTICE—2 hours per week. Mr. TERRY

Students are required to prepare pleadings and the other principal papers necessary under the Code.

CORPORATIONS—2 hours per week. Professor CUMMING

*An optional study cannot be taken for the degree.

EQUITY—2 hours per week. Professor KEENER

This course includes the subject of Trusts begun in the second year, and the jurisdiction of Equity over Contracts, including the specific performance, re-formation, and rescission thereof, Bills for Account, Interpleader, and Equitable Conversion.

EVIDENCE—2 hours per week. Professors KIRCHWEY and CANFIELD

INTERNATIONAL LAW—2 hours per week. Professor MOORE

NEGOTIABLE PAPER—2 hours per week. Professors BURDICK and CANFIELD

PARTNERSHIP—2 hours per week. Professor BURDICK

SURETYSHIP AND MORTGAGE—2 hours per week. Professor STARBUCK

SYSTEMATIC JURISPRUDENCE—2 hours per week. Professor SMITH

This course is based chiefly on the comparison of Roman with English law.

WILLS AND ADMINISTRATION—2 hours per week. Professor STARBUCK

CONFLICT OF PRIVATE LAW—1 hour per week. Professor SMITH

MUNICIPAL CORPORATIONS—1 hour per week. Professor GOODNOW

The instruction in Municipal Corporations is given twice a week from October to February. Except where otherwise stated the instruction extends through the year.

LAW OF TAXATION—1 hour per week. Professor GOODNOW

In the Law of Taxation, the instruction is given twice a week from February to June. Except where otherwise stated, the instruction extends through the year.

DOCTRINES PECULIAR TO NEW YORK LAW—1 hour per week. Mr. CANFIELD

The required work for the degree in the third year is twelve (12) hours per week.

The instruction in Corporations is based on Cumming's Cases on Private Corporations; in Evidence, on Thayer's Cases on Evidence; in Negotiable Paper, on Ames's Cases on Bills and Notes; in Partnership, on Ames's Cases on Partnership; in Wills and Administration, on Gray's Cases on Property.

Moot Courts

Moot Courts are held during the academic year, open only to members of the second- and third-year classes.

Courses in the School of Political Science Ranking as Optionals * and Recommended to Law Students by the Faculty of Law

CONSTITUTIONAL HISTORY OF EUROPE—3 hours a week for the first term. Professor OSGOOD

CONSTITUTIONAL HISTORY OF THE UNITED STATES—3 hours a week for the second term. Professor BURGESS

CONSTITUTIONAL HISTORY OF ENGLAND—2 hours a week. Professor OSGOOD

HISTORICAL AND PRACTICAL POLITICAL ECONOMY—3 hours a week. Professor MAYO-SMITH

TAXATION AND FINANCE—2 hours a week. Professor SELIGMAN

RAILROAD PROBLEMS—3 hours a week. Professor SELIGMAN

HISTORY OF POLITICAL THEORIES—3 hours a week for the first term. Professor DUNNING

*An optional cannot be taken for the degree.

REQUIREMENTS FOR ADMISSION

All applicants for admission must be of good moral character.

Applicants for admission are divided into two classes—those who are and those who are not candidates for a degree.

Candidates for a Degree

Candidates for admission to the first-year class at its formation must be at least eighteen years of age, and of a corresponding increase of age for admission to advanced standing.

Graduates of colleges and scientific schools in good standing, and all persons who have received the academic diploma of the Regents of the State of New York, or who have received the Regents' fifty-count certificate, or a certificate acceptable to the Regents in lieu thereof, are admitted without examination.

All other candidates, except seniors in the School of Arts, must pass the examinations required for admission to the freshman class of the School of Arts of Columbia College, an equivalent amount of French and German being accepted as a substitute for Latin and Greek.

Applicants qualifying as candidates for the degree by presenting the Regents fifty-count certificate,* or a certificate acceptable to the Regents in lieu thereof, or by passing the examination for admission to the freshman class of Columbia College, will be required, if entering the first-year class, to qualify on or before the date of entry; if entering the second-year class, to produce evidence of having qualified at least one year prior thereto; if entering the third-year class, to produce evidence of having qualified two years prior thereto.

Every applicant for advanced standing must pass satisfactory examinations in the work of the first year to be admitted to the second year, and in the work of the first year and in fourteen hours of the second year to be admitted to the third year. No certificate or diploma will be accepted in lieu of these examinations for advanced standing.

Special Students

Applicants who are not candidates for a degree are admitted without a preliminary examination, and may, subject to the approval of the Dean, pursue such courses of study as they elect. Such students will be classified as special students.

Special students must present themselves for examination in each subject selected by them at the first examination held therein, and must pass satisfactory examinations in a majority of the subjects, as a condition of continuing in the school.

* The word count is used by the Regents to represent the numerical value attaching to any given subject, and to obtain a fifty-count certificate one must pass satisfactory examinations in subjects aggregating fifty (50) numerically.

The lists of subjects from which one may select fifty counts and the announcement of the time and place where the Regents' examinations are held, may be had on application to the Registrar of the School of Law.

Examinations

Written examinations are held at the end of each year on the subjects of that year.

No student will be admitted to advanced standing who has failed to pass satisfactory examinations in more than four hours of work per week. Any student failing in the final examination held at the end of the academic year, may present himself for examination a second time during the last week of the summer vacation. No student failing a third time in any given subject will be allowed to continue in the school.

No special examinations are given.

LIBRARY

Every facility is given to students to make use of the law library containing bout 25,000 volumes, and of the general library containing about 125,000 volumes.

The library is open for use, from 8.30 A.M. to 10 P.M., every secular day in the year, except certain holidays.

ADMISSION TO THE BAR

An office clerkship is no longer required of applicants for admission to the New York Bar.

While the course of study leading to the degree of LL.B. covers a period of three years, college graduates who have been in regular attendance upon the lectures and exercises of this school for two years after receiving their college degree, are entitled to apply for admission to the New York Bar at the end of their second year of study. Students who are not college graduates are entitled to apply for admission to the New York Bar at the end of their third year of regular attendance upon the lectures and exercises of this school.

In New Jersey eighteen months spent in this school is regarded as the equivalent for a like period of clerkship in a lawyer's office.

For further information address the Dean of the School of Law.

REGISTER OF STUDENTS

POST-GRADUATE

NAME	RESIDENCE	CITY ADDRESS
Robert Chetwood Beatty, LL.B. (C.)	*New York City*	3 East 9th st.
William Bell Wait, Jr., LL.B. (C.)	*New York City*	412 9th ave.

Post-Graduate Class.....2

THIRD YEAR

Henry S. Acken	*Haworth, N. J.*	
Edward Albert Alexander, B.S. (C. C.)	*New York City*	147 East 62d st.
William Frederick Back	*Brooklyn, N. Y.*	(487 North 2d st.)
Max Jacob Bernheim, A.B. (C.)	*New York City*	111 East 78th st.
Herman Bowsky	*New York City*	254 East 49th st.
Charles C. Brainerd, A.B. (C.)	*Brooklyn, N. Y.*	(487 Greene ave.)
Conrad Braker	*Brooklyn, N. Y.*	(607 Eleventh st.)
Edward Stelle Brownson, Jr., A.M. (C.)	*Brooklyn, N. Y.*	(49 Garden pl.)
Joseph Edmond Bullen, A.B. (Br.); A.M. (C.)	*Newton Centre, Mass.*	151 West 45th st.
Ferdinand Ezra M. Bullowa, A.B. (C. C.); A.M. (C.)	*New York City*	46 East 66th st.
Nathan Platt Bushnell	*Montrose, N. Y.*	
James Dickson Carr, A.B. (R.)	*New York City*	495 Sixth ave.
Pember S. Castleman	*Riverside, Cal.*	111 West 47th st.
Alfred Arthur Cook, B.S. (C. C.); A.M. (C.)	*New York City*	152 East 71st st.
Louis Frederick Dodd	*New York City*, Hotel Nevada, 70th st. & Boul.	
Torrey Everett, A.B. (H. U.)	*Council Bluffs, Ia.*	11 East 46th st.
Lewis Herbert Freedman, A.B. (C. C.)	*New York City*	120 West 125th st.
John Henry Hammond, Ph.B. (Y.)	*St. Paul, Minn.*	29 East 28th st.
Sydney Wesley Hart, Ph.B.	*Hoboken, N. J.*	(232 Washington st.)
Emanuel Hertz, A.B. (C. C.); A.M. (C.)	*New York City*	449 East 80th st.
Eugene Baker Hoffman	*Bozeman, Mont.*	34 West 38th st.
Edwin Sumner Hunt, A.B. (A.)	*Charlestown, N. H.*	34 East 60th st.
Edward Hymes, A.B. (C.)	*Newark, N. J.*	(43 Clinton st.)
Norman Gildersleeve Johnson, A.B. (C.)	*New York City*	480 Mott ave.
Matthew T. Johnston, A.B. (S.J.M.)	*Easton, Md.*	18 West 21st st.

NAME	RESIDENCE	CITY ADDRESS
William C. B. Kemp	*New York City*	751 Fifth ave.
William Nettleton Kennedy, A.B. (K.)	*Rushville, Ind.*	1695 Broadway
Arthur Knox, A.B. (C.C.); A.M. (C.)	*New York City*	472 Mott ave.
Ulysses Grant Marks, B.S. (W.C.)	*Brooklyn, N. Y.*	(319 Clinton st.)
Robert Valentine Mathews	*Brooklyn, N. Y.*	(222 Schermerhorn st.)
Timothy Joseph Murray, A.B. (S.J.); A.M. (S.X.)	*New York City*	55 East 75th st.
Walter S. Newhouse, A.B. (C.)	*New York City*	46 West 73d st.
Raymond Otis, A.B. (R. U.)	*Rochester, N. Y.*	561 Fifth ave.
Nathan Ottinger, B.S. (C.C.); A.M. (C.)	*New York City*	110 East 61st st.
Samuel Pakelnishky	*Syracuse, N. Y.*	127 East 60th st.
Milton Cornelius Palmer, B.S. (C.U.)	*Sing Sing, N. Y.*	
William B. Parsons, A.B. (C. N. J.)	*New York City*	226 West 59th st.
Edward Albert Pfeffer	*New York City*	421 St. Nicholas ave.
Raymond Reubenstein, A.B. (C. C.); A.M. (C.)	*New York City*	129 East 82d st.
Lester R. Riggs	*Salt Lake City, Utah*	148 East 55th st.
George Rosendale, Ph.B. (S. X.)	*New York City*	123 East 114th st.
Joseph Thomas Ryan	*New York City*	311 West 50th st.
James Murray Sanderson	*New York City*	11 East 46th st.
Charles Stiger Skinner	*Jamaica, N. Y.*	155 Broadway
James Bennett Southard	*Cold Spring, N. Y.*	
Augustus C. Stevens	*Syracuse, N. Y.*	561 Fifth ave.
Louis Stürcke	*New York City*	423 East 84th st.
Algernon Thomas Sweeney, B.S. (M. A. C.)	*Newark, N. J.*	(144 Green st.)
Russell Lord Tarbox, A.B. (W.)	*Batavia, N. Y.*	61 West 50th st.
Thomas Walsh, Ph.B. (G.)	*Brooklyn, N. Y.*	(114 First pl.)

Third-Year Class,.....50

SECOND YEAR

Paul Armitage, A.B. (C.)	*Bay Shore, L. I.*	
Berkeley Clarence Austin, A.B. (C. C.)	*Cranford, N. J.*	
Shelley Fowler Austin	*Cranford, N. J.*	
William Thomas Aycock, A.B. (U. S. C.)	*Wedgefield, S. C.*	787 Lexington ave.
Harry Samuel Bandler, A.B. (Y.)	*Owego, N. Y.*	212 Edgecombe ave.
Solomon Charles Bernstein, B.S. (C. C.); A.M. (C.)	*New York City*	138 Henry st.
Charles Seth Boardman	*New York City*	102 East 57th st.
Herbert Spencer Brussel	*New York City*	10 East 81st st.
Russell Ely Burke, A.B. (C.)	*New York City*	17 East 55th st.
John Francis Carew, A,B. (C.)	*New York City*	225 East 58th st.
Thomas Ives Chatfield, A.B. (Y.)	*New York City*	173 Fifth ave.
Paul Clagstone, A.B. (H. U.)	*New York City*	281 Fifth ave.
Solomon A. Cohn, A.B. (C. C.)	*New York City*	44 Bowery
George Stanislaus Connell, A.B. (C.)	*New York City*	154 West 87th st.

NAME	RESIDENCE	CITY ADDRESS
Joseph Jacob Corn	*New York City*	23 East 128th st.
Sidney Clinton Crane	*Plainfield, N. J.*	
William Beers Crowell	*New York City*	1044 Fifth ave.
Eugene Howell Daly, A.B. (C.)	*New York City*	2050 Madison ave.
Lee Sumner Day	*Elyria, O.*	1695 Broadway
Archibald Douglas	*Tarrytown, N. Y.*	33 West 42d st.
John G. Dunbar	*Brooklyn, N. Y.*	(940 Pacific st.)
William C. Dunbar	*Brooklyn, N. Y.*	(940 Pacific st.)
Sydney E. Eads	*Paris, Ill.*	787 Lexington ave.
Horatio Seymour Eisman, A.B. (C. C.)	*New York City*	124 East 74th st.
Hermann George Friedmann, B.S. (C.C.)	*New York City*	922 East 138th st.
Charles Henry George	*Orange, N. J.*	(89 Hillside ave.)
Otto Theodore Hess, A.B. (C.)	*New York City*	307 West 86th st.
Harry Mason Hewitt	*New York City*	261 East 78th st.
Walter Baylis Hopping	*Hanover, N. J.*	
James C. Howell, A.B. (C.)	*Highland Mills, N. Y.*	
Harold Hurd	*Dorchester, Mass.*	137 West 47th st.
Edwin James Johnson	*Richfield Spa, N. Y.*	1695 Broadway
Edward Renshaw Jones, A.B. (H. U.)	*New York City*	20 North Washington sq.
Francis Corey Keyes, A.B. (G.)	*San Francisco, Cal.*	110 East 34th st.
Harvey Roberts Kingsley, A.B. (C.)	*Rutland, Vt.*	588 Fifth ave.
Arthur Charles Kletzsch, A.B. (C.)	*Milwaukee, Wis.*	148 East 56th st.
William R. A. Koehl	*New York City*	980 Sixth ave.
Edgar Julius Kohler, A.B. (C. C.)	*New York City*	115 East 71st st.
Henry M. Levin, B.S. (C. C.)	*New York City*	317 East 79th st.
Louis Levy, A.B. (C. C.)	*New York City*	119 East 122d st.
Edward Livingston, Jr., A.B. (H. U.)	*New York City*	17 East 74th st.
Campbell Erie Locke, A.B. (C.)	*New York City*	23 West 53d st.
Charles Edward Francis McCann	*New York City*	Hotel Lincoln
Cornelius Patrick McIntyre, A.B. (S. H.)	*Montgomery, Ala.*	113 East 24th st.
Robert Mickle Miles, Jr., A.B. (Se. H.)	*So. Orange, N. J.*	
Frederick Felix Neuman, A.B. (C.)	*New York City*	604 Lexington ave.
Adam Gordon Norrie, A.B. (C.)	*New York City*	377 Fifth ave.
Sheridan Shook Norton, A.M. (S. X.)	*New York City*	161 West 71st st.
James F. O'Beirne, A.M. (S. X.)	*New York City*	201 East 20th st.
Charles Rogers Pelgram	*New York City*	31 West 91st st.
Edward Anson Prentice	*Portage, N. Y.*	12 East 47th st.
Harold Sturges Rankine, A.B. (H. C.)	*Geneva, N. Y.*	80 Washington sq., E.
George Ross	*New York City*	128 West 132d st.
Frederick H. Sanborn, A.B. (P. I.)	*Brooklyn, N. Y.*	(13 Spencer pl.)
Jacob Schattman	*New York City*	14 East 126th st.
Joseph Martin Schenck	*Binghamton, N. Y.*	136 East 61st st.
George J. Schleicher	*Cuero, Tex.*	50 West 51st st.
Peter Schmuck, B.S. (C. C.)	*New York City*	323 West 39th st.
Edward Samuel Seidman, A.B. (B.C.)	*New York City*	649 Lexington ave.

Oscar Roland Seitz, A.B. (C.)	*New York City*	1186 Lexington ave.
Henry Merwin Shrady, A.B. (C.)	*New York City*	8 East 66th st.
Francis Raymond Stark, A.M. (S. X.)	*New York City*	48 West 59th st.
William Law Stout	*New York City*	40 Manhattan sq.
Robert William Thompson, Jr., A.B. (C. C.); A.M. (C.)	*New York City*	229 West 97th st.
Henry Ayres Uterhart, A.B. (C.)	*New York City*	552 East 85th st.
Edward Le Clerc Vogt, Jr.,	*Morristown, N. J.*	
Sampson Herbert Weinhandler, A.B. (C. C.)	*New York City*	319 East 17th st.
Frederick De Witt Wells, A.B. (C.)	*New York City*	Hotel Waldorf
Lewis Morris White	*Binghamton, N. Y.*	321 East 42d st.
Samuel Lee Wolff, A.B. (H. U.)	*New York City*	125 East 73d st.

Second-Year Class.....70

FIRST YEAR

William B. Arnold	*N. Adams, Mass.*	127 West 48th st.
Lawrence Atterbury, A.B. (C.)	*New York City*	141 West 86th st.
Grosvenor Hyde Backus, A.B. (A.)	*Brooklyn, N. Y.*	(57 Livingston st.)
Major W. Barber	*Brooklyn, N. Y.*	(181 McDonough st.)
George R. Beach	*Jersey City, N. J.*	(105 Hoboken ave.)
Milton Elvin Blanchard	*Newark, N. J.*	(589 High st.)
Tristan Charles Boekelman	*New York City*	106 West 45th st.
Francis Halsey Boland, M.M.E. (C. U.)	*Brooklyn, N. Y.*	(194 Hancock st.)
J. Frederick Brommer	*Brooklyn, N. Y.*	(183 Hooper st.)
Edward W. Burdick	*Syracuse, N. Y.*	Pelham Manor.
John Jacob Burrows	*Boonville, N. Y.*	
Emanuel Siegfried Cahn, B.S. (C. C.)	*New York City*	161 East 79th st.
George Bowen Case, A.B. (Y.)	*Kansas City, Mo.*	11 East 46th st.
Isidore Cohn	*Buffalo, N. Y.*	142 Madison st.
Bernard M. Cone, A.B. (J. H.)	*Baltimore, Md.*	116 West 74th st.
Alexander Mitchell Crane, A.B. (H. U.)	*Scarsdale, N. Y.*	
Andrew Wright Crawford, A.B. (U. P.)	*Bryn Mawr, Pa.*	160 West 92d st.
Edward Irving Croll	*Newark, N. J.*	(463 Broad st.)
Constantine Stanislaus Cummings, A.B. (C. B. C.)	*St. Louis, Mo.*	101 East 25th st.
Melvin Henry Dalberg	*New York City*	78 East 91st st.
Frederick Denicke, A.B. (U. Ca.)	*San Francisco, Cal.*	208 East 16th st.
Asa Don Dickinson	*Bay Ridge, N. Y.*	
Frederick Dwight, A.B. (Y.)	*Brooklyn, N. Y.*	(51 Remsen st.)
Jesse W. Ehrich, A.B. (C. C.)	*New York City*	54 West 75th st.
Robert W. B. Elliott, A.M. (U. S.)	*Sewanee, Tenn.*	8 West 34th st.
Henry Lane Eno, A.B. (Y.)	*Saugatuck, Conn.*	309 Lexington ave.
Moses Feltenstein	*New York City*	170 Henry st.
Charles Lewis Fleming, Jr.	*New York City*	845 St. Nicholas ave.
David Joseph Fox, B.S. (C. C.)	*New York City*	127 East 79th st.
Albert Fullerton, A.B. (U. K.)	*Atchison, Kans.*	357 West 55th st.

NAME	RESIDENCE	CITY ADDRESS
Joseph Whitney Ganson, A.B. (H. U.)	*New York City*	47 West 33d st.
Benjamin Thorn Gilbert	*Utica, N. Y.*	
Charles Monteith Gilpin, A.B. (S. J. M.)	*Elkton, Md.*	444 Lexington ave.
George Selden Goodrich	*Brooklyn, N. Y.*	(416 Clinton ave.)
Daniel Eddie Griswold	*Lyme, Conn.*	359 Lexington ave.
Meredith Hare, A.B. (Y.)	*New York City*	28 West 11th st.
Lawrence Hasbrouck	*New York City*	39 West 90th st.
Alfred Renold Heineman	*Chicago, Ill.*	645 Madison ave.
Henry Budelman Heylman, A.B. (C. C.)	*New York City*	561 Buckhout st.
William Henry Hirsch, A.B. (C. C.)	*New York City*	265 West 21st st.
Edwin O. Holter, A.B. (Y.)	*Helena, Mont.*	11 East 46th st.
Lloyd Mortimer Howell, A.B. (Y.)	*West Hampton Beach, N. Y.*	120 Madison ave.
Ralph Hughes, A.B. (W. J.)	*Liberty, Mo.*	38 West 61st st.
Robert Selden Huse, L.L.B. (U. S.)	*Highland Falls, N. Y.*	8 West 34th st.
Robert Hamilton Hutchins, A. M. (T.)	*Brandon, Vt.*	147 West 61st st.
Maurice Samuel Hyman, A.B. (H. U.)	*New York City*	102 West 77th st.
Ralph Henry Johnson, A.B. (U. N.)	*Friend, Neb.*	159 East 51st st.
Charles Henry Ketcham	*Yonkers, N. Y.*	(148 N. Broadway)
James T. Kilbreth, Jr., A.B. (H. U.)	*Southampton, L. I.*	"The Dakota," Central P. R. W.
Clarence Broughton Kilmer	*Rock City Falls, N. Y.*	9 East 57th st.
John Duggan King, A.B. (S. J.)	*Bergenfield, N. J.*	544 West 43d st.
Richard Lawrence	*New York City*	13 East 22d st.
Harry Cohen Levy, B.S. (W. & J.)	*New York City*	13 West 88th st.
Walter Henry Liebmann, A.B. (C.)	*New York City*	42 East 72d st.
Herbert R. Limburger	*New York City*	507 Madison ave.
Gerald Arthur Lowe	*Plainfield, N. J.*	
Mark Lee Luther	*Albion, N. Y.*	153 West 48th st.
Charles Eddy McCarthy	*Troy, N. Y.*	18 East 58th st.
William Townsend McCoun, Jr., D.V.S. (A. V. C.)	*Oyster Bay, L. I.*	
John Joseph McElhiney	*Long Branch, N. J.*	
Moncure March, A.B. (L.)	*Easton, Pa.*	45 West 55th st.
Frank Heath Mason,	*Greenwich, N. Y.*	104 West 48th st.
Arthur Mayer	*New York City*	415 West 145th st.
Samuel M. Michel	*New York City*	246 East 51st st.
Marcus A. Miller	*Wilkes Barre, Pa.*	774 Madison ave.
Walter Jefferson Moore, A.B. (H. U.)	*New York City*	60 East 49th st.
Edward Henry Mount	*Mahopac Falls, N. Y.*	
Samuel Frederick Nichols	*Beatrice, Neb.*	Rutherford, N. J.
David Parry	*Highland Falls, N. Y.*	60 Hemrod st., Brooklyn.
Benjamin G. Paskusz, A.B. (C. C.)	*New York City*	242 East 72d st.
Isidro Pendas, Jr.	*Brooklyn, N. Y.*	(22 Brevoort pl.)
Frank Lyon Polk, A.B. (Y.)	*New York City*	7 East 36th st.
Arthur M. Price	*New York City*	113 West 75th st.

NAME	RESIDENCE	CITY ADDRESS
John Gordon Quigley	*Goshen, N. Y.*	931 Boulevard, Astoria.
Harry Gardner Rand	*Troy, N. Y.*	18 East 58th st.
Charles C. Reiley	*New York City*	145 East 34th st.
William Delamater Riter	*Salt Lake City, Utah*	148 East 55th st.
Edgar Walter Roovers	*Brooklyn, N. Y.*	(170 Dean st.)
Paul Brown Scarff	*Burlington, Ia.*	329 East 69th st.
Henry Schoenherr, Jr.	*Brooklyn, N. Y.*	(150 Wythe ave.)
Walter Stanley Schütz, A.B. (T.)	*Hartford, Conn.*	147 West 61st st.
Lorenzo B. Scranton, A.B. (N.)	*Lower Lake, Cal.*	108 West 49th st.
Edward Augustus Selfridge, Jr., Ph.B. (U. C.)	*San Francisco, Cal.*	147 West 45th st.
Arthur Francis Sellick	*Lockport, N. Y.*	76 West 48th st.
Fredrick Nicholas Sinks, Ph.B. (Y.)	*Columbus, O.*	Bayonne, N. J.
Harry George Smith	*New York City*	924 Third ave.
Max Stadie	*New York City*	186 East 111th st.
Henry Steinert	*New York City*	221 East 53d st.
Samuel Sturtz	*New York City*	301 West 44th st.
Clarence E. Sutherland	*Malcom, N. Y.*	65 East 59th st.
Ignatius Sutherland	*Brooklyn, N. Y.*	(46 St. Johns pl.)
Charles Robert Swords, A.B. (C.)	*New Hamburgh, N. Y.*	29 East 28th st.
Lawrence Arnold Tanzer, A.B. (H. U.)	*New York City*	109 West 77th st.
George Ogden Thomas	*Topeka, Kans.*	61 West 54th st.
Nathaniel Compton Toms	*Morristown, N. J.*	
John Garrett Underhill, A.B. (P. I.)	*Brooklyn, N. Y.*	(97 Lafayette ave.)
George Finch Van Slyck, A.B. (Y.)	*New York City*	246 West 75th st.
Clifton W. Wardell	*Broooklyn, N. Y.*	(72 Orange st.)
Charles Rudolf Wendt	*New York City*	25 East 37th st,
Harry Dauchy West	*Plainfield, N. J.*	(718 Central ave.)
Abraham Wielar	*New York City*	251 East 84th st.
James Dawes Williams, A.B. (Y.)	*North Adams, Mass.*	Murray Hill Hotel

First-Year Class.....102

SPECIAL STUDENTS

Alexander Alexander	*New York City*	147 East 62d st.
Carroll Hess Allen	*Los Angeles, Cal.*	39 Thirteenth ave., Newark, N. J.
George E. Arents	*New York City*	38 West 57th st.
Allan C. Bakewell	*Pittsburgh, Pa.*	Buckingham Hotel
James Searle Barclay, Jr.	*New York City*	64 West 38th st.
Henry Burr Barnes, Jr., A.B. (Y.)	*New York City*	5 East 44th st.
Daniel Mayer Beach, B.L. (H. C.)	*Watkins, N. Y.*	9 East 27th st.
William M. Benjamin	*Garrison-on-Hudson*	
John Morton Boland	*Brooklyn, N. Y.*	(194 Hancock st.)
Alfred Wreaks Booraem	*New York City*	48 West 82d st.
William O. Carpenter	*Brooklyn, N. Y.*	(165 New York ave.)
William H. Clapp	*New York City*	125 West 45th st.

NAME	RESIDENCE	CITY ADDRESS
Ewing Leo Deputy	*Portsmouth, O.*	106 East 55th st.
Faber C. Donahue	*Sandusky, O.*	14 East 27th st.
George Henry Dresler	*New York City*	119 West 13th st.
Charles Edwin Heckler	*Chicago, Ill.*	121 West 48th st.
Alfred Walker Ireland	*New York City*	44 West 47th st.
Mandeville Cornelius Jacobus	*Englewood, N. J.*	
Harry Partridge Keith	*Hempstead, L. I.*	
Hiram Lingle	*La Fayette, Ind.*	52 West 25th st.
Albert Daniel Morstadt	*New York City*	234 East 118th st.
John H. Oppenheimer	*New York City*	207 West 56th st.
Henry A. Palmer	*Cranston, R. I.*	161 West 102d st.
Percy Grosvenor Parsons	*Boston, Mass.*	102 West 44th st.
Joshua R. H. Potts	*New Brunswick, N. J.*	228 East 40th st.
James Edward Roderick	*Hazleton, Pa.*	59 East 127th st.
Adolph A. Rubino	*New York City*	1698 Lexington ave.
Irving E. Schwarz	*Dover, N. J.*	
Dudley D. Sicher	*New York City*	54 East 65th st.
Robert William Stewart	*New York City*	123 West 11th st.
Bernard L. Tone	*Hartsdale, N. Y.*	18 Wall st.
Peter Van Oosterhout, Ph.B. ; LL.B. (U.I.)	*Orange City, Ia.*	150 East 53d st.
Andrew Nelson Walker	*Nicholson, Pa.*	(E. Orange, N. J.)
Ray S. Walker	*La Fayette, Ind.*	52 West 25th st.
Charles M. Whitney, Jr.	*Brooklyn, N. Y.*	(20 Pierrepont st.)

Special Students.....35

SENIORS, SCHOOL OF ARTS

Francis Eugene Bauch	*Brooklyn, N. Y.*	(1059 Greene ave.)
William Leopold Cahn	*New York City*	50 East 72d st.
Philetus Mortimer Capen	*New York City*	48 East 63d st.
Frederick Morse Cutler	*New York City*	2109 Madison ave.
Schuyler Emerson Day	*New York City*	13 West 63d st.
John Ewen	*Spuyten Duyvil*	
Clarence Randolph Freeman	*New York City*	123 East 74th st.
Felix Mortimer Gernsheim	*New York City*	1 East 44th st.
Victor William Hungerford	*New York City*	121 West 69th st.
Conrad Saxe Keyes	*Brooklyn, N. Y.*	(27 Monroe st.)
Maulsby Kimball	*Kenosha, Wis.*	38 West 34th st.
Arthur Kline Kuhn	*New York City*	32 West 84th st.
Edward Lazansky	*Brooklyn, N. Y.*	(224 Carlton ave.)
William Thomas Mason	*New York City*	37 West 48th st.
George Frederick Middendorf, Jr.	*Brooklyn, N. Y.*	(90 Schenck ave.)
Louis Hasbrouck Newkirk	*Monticello, N. Y.*	38 West 34th st.
Edward Codman Parish	*Irvington, Y. Y.*	1 West 19th st.
Henry Berry Pogson	*West Farms, N. Y.*	2020 Vyse ave.
Frederic White Shepard	*Brooklyn, N. Y.*	(Columbia Heights)
Abram Richard Stern	*New York City*	55 West 50th st.

NAME	RESIDENCE	CITY ADDRESS
David Houghtaling Taylor	*New York City*	16 East 56th st.
Stephen Fraser Thayer	*Yonkers, N. Y.*	75 Hawthorne ave.
Richmond Weed	*Flushing, L. I.*	(30 Jamaica ave.)

Seniors in the School of Arts 23

UNIVERSITY STUDENTS TAKING ONE OR MORE COURSES IN LAW

NAME	RESIDENCE	CITY ADDRESS
Eugene May Heath	*Louisville, Ky.*	72 West 48th st.
Charles C. Rosewater, Ph.B. (C. U.)	*Omaha, Neb.*	202 West 44th st.
Charles W. Tooke, A.B. (S. U.)	*New York City*	601 Lexington ave.
Joseph Alexander Wright, Ph.B. (D. P.)	*Columbus, Ind.*	106 East 55th st.

University Students.....4

PARENTAGE OF COLLEGE DEGREES

ABBREVIATIONS		GRADUATES
A.	Amherst College	2
B.C.	Buchtel College, O.	1
Br.	Brown University	1
C.	Columbia College	25
C.B.S.	Christian Bros. College, St. Louis, Mo.	1
C.C.	College of the City of New York	25
C.N.J.	College of New Jersey	1
C.U.	Cornell University	3
D.P.	De Pauw University	1
G.	Georgetown College	2
H.C.	Hobart College	2
H.U.	Harvard University	11
J.H.	Johns Hopkins University	1
K.	Kenyon College	1
L.	Lafayette College	1
M.A.C.	Michigan Agricultural College	1
N.	Napa College	1
P.I.	Polytechnic Institute, Brooklyn	2
R.	Rutgers College	1
R.U.	University of Rochester	1
Se.H.	Seton Hall College	1
S.H.	Spring Hill College	1
S.J.	St. John's College, New York	2
S.J.M.	St. John's College, Md.	2
S.U.	Syracuse University	1
S.X.	St. Francis Xavier's College, N. Y.	5
T.	Trinity College, Ct.	2
U.Ca.	University of California	2
U.I.	University of Iowa	1
U.K.	University of Kansas	1
U.N.	University of Nebraska	1
U.P.	University of Pennsylvania	1
U.S.	University of the South	1
U.S.C.	University of South Carolina	1
W.	Williams College	1
W.C.	Westminster College, Pa.	1
W.J.	William Jewell College, Liberty, Mo.	1
W. & J.	Washington & Jefferson College	1
Y.	Yale University	14
39 Colleges and Universities.	Total graduates	124

SUMMARY

Post-Graduate Students	2
Third-Year Class	50
Second-Year Class	70
First-Year Class	102
Special Students	35
Seniors in the School of Arts	23
	281
University Students taking one or more courses in Law	4
Total	285

SCHOOL OF MEDICINE

COLLEGE OF PHYSICIANS AND SURGEONS

The instruction in medicine is given under the following departments:

ANATOMY
CHEMISTRY AND PHYSICS
DISEASES OF CHILDREN
DERMATOLOGY
GENITO-URINARY AND VENEREAL DISEASES
GYNECOLOGY
LARYNGOLOGY
MATERIA MEDICA AND THERAPEUTICS
NEUROLOGY
OBSTETRICS
OPHTHALMOLOGY
OTOLOGY
PATHOLOGY
PHYSIOLOGY
PRACTICE OF MEDICINE
SURGERY

Officers of the Faculty

JAMES W. MCLANE, M.D.....*Dean and ex-officio Member of the University Council*
GEORGE M. TUTTLE, M.D.....*Secretary*
GEORGE L. PEABODY, M.D.....*Elected Delegate to the University Council*
EDWIN B. CRAGIN, M.D.....*Asst. Secretary*

Faculty

SETH LOW, LL.D., *President*

JAMES W. MCLANE, M.D., *Professor of Obstetrics*
CHARLES F. CHANDLER, Ph.D., *Professor of Chemistry and Medical Jurisprudence*
FRANCIS DELAFIELD, M.D., *Professor of the Practice of Medicine*
JOHN G. CURTIS, M.D., *Professor of Physiology*
GEORGE M. TUTTLE, M.D., *Professor of Gynecology*
GEORGE L. PEABODY, M.D., *Professor of Materia Medica and Therapeutics*
WILLIAM T. BULL, M.D., *Professor of Surgery*
M. ALLEN STARR, M D., *Professor of Diseases of the Mind and Nervous System*
GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*
R. F. WEIR, M.D., *Professor of Surgery*
T. MITCHELL PRUDDEN, M.D., *Professor of Pathology, Directory of the Laboratories of Histology, Pathology, and Bacteriology*

NOTE: For other instructors see departmental statements.

GENERAL STATEMENT

The College of Physicians and Surgeons, on July 1, 1891, became, under the authority of the Legislature, a part of Columbia College. This merger, which makes the medical department in a complete sense an integral part of the university system, largely increases the usefulness of the medical school, favors the thoroughness of scientific medical education, and promotes scientific research. The accessions to the teaching force, notably in the department of anatomy and in the physiological, pathological, and chemical laboratories, permit the realization, to a degree previously quite impossible, of the great opportunities for instruction and research afforded by the excellence of the dissecting rooms, the laboratories, and apparatus.

The college occupies a group of buildings, given by the late William H. Vanderbilt and members of his family, and by William D. Sloane, Esq., which stand upon thirty contiguous lots of land, bounded on the south, west, and north by Fifty-ninth Street, Tenth Avenue, and Sixtieth Street, respectively, and lying immediately opposite to the Roosevelt Hospital.

The station, which is a few steps from the college, at the corner of Fifty-ninth Street and Ninth Avenue, is the point of union of the Ninth Avenue and Sixth Avenue Elevated Railroads, by either of which the buildings are immediately accessible from the north and south.

The "across-town" surface cars of the Belt-line Surface Railway move east and west along Fifty-ninth Street, pass the site of the college, and place it in easy communication with the Second and Third Avenue Elevated Roads, and with the numerous lines of surface cars which reach Fifty-ninth Street from the north and south. All important points in the city, including the various hospitals, can thus readily be reached from the college without a walk of any length.

The buildings appertaining to the college are three in number:

THE COLLEGE BUILDING PROPER;
THE VANDERBILT CLINIC;
THE SLOANE MATERNITY HOSPITAL.

The College Building

THE COLLEGE BUILDING PROPER has been designed to facilitate that combination of didactic instruction with laboratory work which is essential to a modern scientific training. It consists of a *southern portion*, measuring 140 feet by 43 feet, extending along Fifty-ninth Street; of a *northern portion*, 96 feet by 43 feet, extending along Sixtieth Street; and of a *middle portion*, 96 feet by 55 feet, connecting the other two. The total area covered is therefore 15,428 square feet. Each story above the basement of the northern and southern portions has been built "in the clear," and contains neither brick partitions nor iron columns. It is therefore possible to remodel the interior at any future time.

Vanderbilt Clinic

THE VANDERBILT CLINIC is upon the land given to the college at the corner of Sixtieth Street and Tenth Avenue, and is connected with the college building proper by a covered way.

This institution, which has been built and endowed by the sons of the late William H. Vanderbilt as a memorial of their father, supplies a fully equipped dispensary service for the sick poor; and for the college, whose professors have entire charge of its practice, a field for extended and practical clinical instruction and research in all branches.

Besides its *dispensary department*, the building contains numerous *small rooms* for the direct practical teaching of diagnosis and treatment to groups of learners; a so-called "*scope-room*" where a number of students can at once be instructed in the use of the ophthalmoscope, the laryngoscope, and the like; and a *theatre*, for clinical lectures, which accommodates an audience of nearly four hundred. During the year 1893, 129,444 patients were treated at this institution, of whom 39,569 were new patients.

Sloane Maternity Hospital

THE SLOANE MATERNITY HOSPITAL is upon the college land at the corner of Fifty-ninth Street and Tenth Avenue.

This is a lying-in hospital given by William D. Sloane, Esq., whose wife, a daughter of the late William H. Vanderbilt, has endowed the institution by making all of its beds free in perpetuity.

The obstetric service here is under the exclusive direction of the professor of midwifery at the college, the instructor in obstetrics being the resident physician.

For further details and for the practical instruction at this hospital, see "Obstetrics," page 94.

CURRICULUM

Beginning with the academic year 1894–95, the work required of the students at this college who are candidates for the degree of M.D. covers four years of study according to the curriculum set forth below in outline.

This curriculum will be worked up in detail year by year, as the course progresses, the right being reserved to make amendments as experience may prove necessary.

First Year

(For particulars see table of contents—Departmental statements.)

PHYSICS AND CHEMISTRY, INCLUDING MEDICAL CHEMISTRY.

Lectures combined with demonstrations, 4 a week.

Conferences, 2 a week for one half the year.

* *Laboratory Work* in practical physics, 2-hour exercises once a week for one half the year.

* At the Columbia College Physical Laboratory, 49th Street and Madison Avenue.

Laboratory Work in practical medical chemistry, 2-hour exercises twice a week for one half the year.

ANATOMY, begun.

Demonstrations to sections, 4 a week for each student.

Laboratory Work in dissection, 18 to 20 hours a week, for from 3 to 5 periods of 4 weeks each.

NORMAL HISTOLOGY, begun.

Laboratory Work, 2-hour exercises three times a week for one half the year.

PHYSIOLOGY, begun.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections, from 1 to 3 a week for each student.

EXAMINATIONS upon the work of the first year.

Second Year

ANATOMY, finished.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections, 4 a week for each student for one half the year: 5 a week for each student for one half the year.

Laboratory Work in dissection, 10 to 12 hours a week for from 1 to 3 periods of 4 weeks each.

NORMAL HISTOLOGY, finished.

Laboratory Work, 2-hour exercises twice a week for one half the year.

PHYSIOLOGY, finished.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections, from 1 to 3 a week for each student.

PATHOLOGICAL ANATOMY, begun.

Attendance at Autopsies, with practical instruction, twice a week for 4 weeks.

BACTERIOLOGY.

Laboratory Work, 2-hour exercises 3 times a week for one fourth of the year.

MATERIA MEDICA AND THERAPEUTICS, begun.

Lectures, 3 a week.

TOXICOLOGY.

Laboratory Work, 2-hour exercises twice a week for one fourth of the year.

OBSTETRICS AND GYNECOLOGY, begun.

Recitations combined with demonstrations to sections, 1 a week for each student.

EXAMINATIONS upon the work of the second year.

Third Year

MATERIA MEDICA AND THERAPEUTICS, finished.

Lectures, 3 a week.

PATHOLOGICAL ANATOMY, finished.

Demonstrations to sections, 2 a week for each student.

PATHOLOGICAL HISTOLOGY.

Laboratory Work, 2-hour exercises 3 times a week for one half the year.

THE PRACTICE OF MEDICINE, INCLUDING THE DISEASES OF THE MIND AND NERVOUS SYSTEM, begun.

Lectures, 3 a week.

Clinical Lectures at the Vanderbilt Clinic, once a week.

Clinical Lectures or instruction in the wards at the Roosevelt Hospital, once a week ; at the New York Hospital once a week for one half the year, twice a week for one half the year.

Practical Clinical Instruction to sections in physical diagnosis, for each student twice a week for 16 weeks.

Practical Clinical Instruction to sections in general diagnosis, for each student twice a week for 8 weeks.

THE PRINCIPLES AND PRACTICE OF SURGERY, begun.

Lectures, 3 a week.

Clinical Lectures at the Vanderbilt Clinic, once a week.

Clinical Lectures and the witnessing of operations at the New York or Roosevelt Hospital, once a week ; at the New York Hospital (in addition to the above), once a week for one half the year ; at the Presbyterian Hospital, once a week for one half the year.

Practical Clinical Instruction to sections, for each student twice a week for 16 weeks.

Optional—Clinical Lectures and the witnessing of operations at St. Luke's Hospital.

OBSTETRICS AND GYNECOLOGY, continued.

Lectures, 3 a week.

Clinical Lectures in Gynecology at the Vanderbilt Clinic, 1 a week.

Clinical Lectures and the witnessing of operations in gynecology at the Roosevelt Hospital, by sections, 6 exercises for each student.

Practical Clinical Instruction to sections in gynecology, 6 exercises for each student.

VENEREAL DISEASES.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Clinical Lectures at Bellevue Hospital, 1 a week for one half the year.

Practical Clinical Instruction to sections, 12 exercises for each student.

Optional—Clinics at the City Hospital, Blackwell's Island, 1 a week for three months.

DISEASES OF THE EYE.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 exercises for each student.

DISEASES OF THE EAR.

Practical Clinical Instruction to sections, 6 exercises for each student.

EXAMINATIONS upon the work of the third year.

Fourth Year

THE PRACTICE OF MEDICINE, INCLUDING THE DISEASES OF THE MIND AND NERVOUS SYSTEM, finished.

Lectures, 3 a week.

Clinical Lectures. at the Vanderbilt Clinic, 2 a week.

Clinical Lectures or Instruction in the wards, at the Roosevelt Hospital once a week; at the New York Hospital once a week for 4 months.

Practical Clinical Instruction to sections in the wards of the Roosevelt or Bellevue Hospital, for each student 2-hour exercises, 3 times a week for 8 weeks.

Practical Clinical Instruction to sections in the diagnosis of diseases of the nervous system, 6 exercises for each student.

Optional—Clinical Instruction in Bellevue and Presbyterian Hospitals, once a week.

CLINICAL MICROSCOPY.

Laboratory Work, 2-hour exercises twice a week for 8 weeks.

THE PRINCIPLES AND PRACTICE OF SURGERY, finished.

Lectures, 3 a week.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Clinical Lectures and the witnessing of operations at the New York or Roosevelt Hospital, once a week for one half the year; at Bellevue Hospital, once a week for one half the year; at the Presbyterian Hospital, once a week for one half the year.

Surgical Demonstrations at the Roosevelt Hospital, once a week for one half the year.

Practical Clinical Instruction to sections in the wards of Bellevue Hospital, for each student 2-hour exercises twice a week for 8 weeks.

Operative Surgery on the Cadaver for sections, 12 lessons; required or elective as may hereafter be determined.

Optional—Clinical Lectures and the witnessing of operations at the New York Hospital (additional to the above); at St. Luke's Hospital.

ORTHOPÆDIC SURGERY.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 exercises for each student.

OBSTETRICS AND GYNECOLOGY, finished.

Attendance upon Confinements at the Sloane Maternity Hospital.

Practical Clinical Instruction in obstetrics to sections, at the Sloane Maternity Hospital, for each student, daily for 1 week.

Clinical Lectures in gynecology at the Vanderbilt Clinic, 1 a week.

DISEASES OF CHILDREN.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

DISEASES OF THE SKIN.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

Diseases of the Throat and Nose.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

Examinations upon the work of the fourth year, *including an elective course or courses ; see below.*

Elective Courses

Each student of the fourth year will be required, within such time as shall be prescribed after the beginning of the academic year, to elect from a list of elective courses either one course or more, as shall be determined hereafter ; such election to be final.

The course or courses thus elected, the student will be required to attend, and he will be required also to be examined thereon as a pre-requisite for the degree of M.D.

The elective courses will be numerous, and in various departments, both clinical and otherwise ; and the Choice will not be confined to departments represented in the Faculty of Medicine, but will be extended to allied subjects.

In view of the wide range of choice thus to be provided for, no student will be admitted to any elective course unless his attainments shall be judged adequate by the head of the department in which the course is offered.

Elective courses will be organized, if possible, in the following themes or their subdivisions, and in such others as may be approved hereafter :

Surgical Diagnosis ;
Obstetrics ;
Diagnosis of Nervous Diseases ;
Localization of Nervous Diseases ;
Insanity (clinical course) ;
Ophthalmology ;
Venereal Diseases ;
Therapeutics of Diseases of the Skin ;
Contagious Diseases ;
Microscopic Technology ;
Pathological Anatomy and Histology of the Organs of Generation ;
Pathological Anatomy and Histology of the Nervous System ;
Cellular Biology ;
Comparative Embryology ;
Human and Comparative Morphology ;
Neuro-Muscular Physiology ;
Physiological Technique ;
Physiological and Experimental Psychology ;
Philosophy ;
Botany ;
Chemistry ;
Physics.

EXAMINATIONS AND STANDING

Each student will be examined, each year, upon the work of that year.

A student's standing for the first year, in a given department, if found satis-

factory, will not be invalidated by failure in other departments, or by failure in a subsequent year in the same department.

A second examination, for candidates found deficient at the close of the first year's work, will be held during the week before the opening of the following session.

No student will be permitted to advance with his class from the first to the second year, unless his standing shall have been found satisfactory, before the beginning of the work of the second year, in three out of the four departments of (1) Physics and Chemistry ; (2) Anatomy ; (3) Normal Histology ; (4) Physiology.

A student found deficient in one only of the four departments of the first year may be permitted to advance with his class, on condition that he make good his first year's standing, in the department in which he shall have failed, before being admitted to any of the examinations upon the studies of the second year held at the end thereof.

The standing of a student for the first year will be determined as follows :

1. *Physiology*, by an examination in writing upon the lectures and demonstrations of the year.

2. *Anatomy*, by (*a*) a record of the student's practical work during the year ; (*b*) a practical examination ; (*c*) a brief examination in writing.

3. *Normal Histology*, as for Anatomy.

4. *Physics and Chemistry*, by (*a*) a record of the student's practical work during the year ; (*b*) a practical examination in Physics ; (*c*) a practical examination in Chemistry ; (*d*) an examination, in writing, in Physics and Chemistry.

A bad record of practical work in a department may bar a student from examination ; or a bad practical examination may bar him from an examination in writing ; the result in either case being failure in the year's work in that department.

ADMISSION TO ADVANCED STANDING

Admission may be granted to advanced standing at the beginning of the second or of the third year, but not of the fourth year without the special consent of the Faculty.

Every applicant for advanced standing will be required (1) to present satisfactory evidence of having attended courses reasonably equivalent to those already attended by the class to which he seeks admission (see also "GRADUATION," p. 178) ; (2) to be examined for admission in all the subjects in which the said class shall have been examined already.

No one will be admitted to advanced standing in the four-years' course at the beginning of the second year before October, 1895 ; or of the third year before October, 1896.

TEXT-BOOKS AND INSTRUMENTS

The following list comprises the text-books and instruments recommended. The text-books are *for reference only*, unless otherwise specified in the notices of the several departments.

For the convenience of those who wish to reckon up their expenses in ad-

vance, there are appended the lowest prices at which the books, in cloth bindings, can be purchased in New York. These prices are liable to fluctuations. As a rule, the latest editions only of text-books should be purchased :

Gray's Anatomy (with colored plates), $5.60 ; *or* Quain's Anatomy, new edition not yet completed ; Foster's Physiology, $3.60 ; Fownes' Chemistry, $2.20 ; Ganot's Physics, $4 ; *or* Barker's Physics, $4.50 ; Pellew's Medical and Physiological Chemistry, $2 ; H. C. Wood's Therapeutics, $4.80 ; E. Curtis' General Medicinal Technology, 80 cents; Hare's Practical Therapeutics, $3 ; Senn's Principles of Surgery, $4.50 ; Treves' Manual of Surgery, $4.80 ; American Text-Book of Surgery, $7 ; Playfair's Midwifery, $3.20 ; *or* Lusk's Midwifery, $4 ; August Martin's Diseases of Women, $3.20 ; or American Text-Book of Gynecology, $6 ; *or* Hart and Barbour's Manual of Gynecology, $5.60 ; Pepper, American Text-Book of Medicine, $10 ; Delafield and Prudden's Pathological Anatomy and Histology, $4.80 ; Piersol's Normal Histology, $2.80 : Ashby and Wright on the Diseases of Children, $4.00 ; Bumstead and Taylor on Venereal Diseases ; Swanzy's Diseases of the Eye, $2.40 ; Buck's Manual of Diseases of the Ear, $2 ; Jackson's Handbook of Skin Diseases, $2.20 ; Bosworth, Diseases of the Nose and Throat, $9.60 ; Gowers' Diseases of the Nervous System, $6.40 ; Dana, Text-Book of Nervous Diseases, $2.60 ; Kirchoff, Handbook of Insanity, $2.20.

A "dissecting case," containing all the necessary instruments can be bought for from $2.35 to $3.35.

CLINICS

The clinical courses offered for 1894–95 are all given under their appropriate headings in the foregoing pages, in connection with the didactic teaching.

It seems proper also to make the following connected statement of the opportunities for clinical study in all branches which are available for matriculates of the College of Physicians and Surgeons.

When not otherwise specified, the exercise is a clinical lecture, clinical "section teaching" being noticed, in what follows, only in certain cases. For the courses in "section teaching" the reader is referred to the foregoing classified statements of instruction. At many clinics operations performed before the class are an important feature.

All the clinical instruction for 1894–95 is in connection with the three-years' course.

Clinics at the Vanderbilt Clinic

Eleven clinics are given each week at the Vanderbilt Clinic, as follows :

SURGICAL—Professors BULL and WEIR ; Mondays, 12 M.

DISEASES OF THE EAR—Professor BUCK ; Clinical Instruction to Sections ; Wednesdays, 2 P.M.

DISEASES OF THE SKIN—Professor FOX ; Mondays, 3 P.M.

DISEASES OF THE THROAT AND NOSE (with laryngoscopic and rhinoscopic demonstrations)—Professor LEFFERTS ; Tuesdays, 2 P.M.

DISEASES OF THE EYE—Professor KNAPP ; Tuesdays, 3 P.M.

DISEASES OF CHILDREN—Professor JACOBI ; Wednesdays, 2.30 P.M.

VENEREAL DISEASES—Professor TAYLOR; Thursdays, 2 P.M.

MEDICAL—Professor DELAFIELD; Thursdays, 3 P.M.

DISEASES OF THE MIND AND NERVOUS SYSTEM—Professor STARR; Fridays, 2 P.M.

ORTHOPÆDIC SURGERY—Dr. GIBNEY; Fridays, 12 M.

DISEASES OF WOMEN—Professor TUTTLE; Fridays, 3 P.M.

Hospital Clinics

See the several departments. For appointments to the house-staffs of the hospitals, see page 176.

Besides the Vanderbilt clinic, the general and special hospitals of New York afford most important fields for clinical teaching. This college is strongly represented on the staffs of these institutions, and regular clinical instruction at hospitals is made a prominent feature of the curriculum. *Admission is free* to all matriculated students. At all the following hospitals instruction is given by officers of the college.

SLOANE MATERNITY HOSPITAL, corner of Fifty-ninth Street and Tenth Avenue. See pages 94 and 167.

ROOSEVELT HOSPITAL—This has long been the seat of thorough clinical work, and has become of special importance in this respect from its position immediately opposite the new buildings of the College of Physicians and Surgeons upon Fifty-ninth Street, between Ninth and Tenth Avenues. Moreover, this hospital, a few years ago, received a bequest of several hundred thousand dollars for the erection and endowment of THE SYMS OPERATING THEATRE, which now offers unrivalled facilities for instruction in operative surgery.

THE MCLANE OPERATING THEATRE is used for operative gynecology by Professor Tuttle exclusively. See page 71.

The Roosevelt is a general hospital of one hundred and eighty beds, and it also possesses a flourishing out-patient department.

Public clinics are given here as follows, throughout the college session:

Medical—Mondays at 4 P.M., Professors DELAFIELD and DRAPER and Dr. ROOSEVELT.

Surgical—Sundays at 2.30 P.M., Professor MCBURNEY.

Gynecological—Tuesdays, Thursdays, and Saturdays, at 2.30 P.M. Professor TUTTLE.

NEW YORK HOSPITAL, Fifteenth Street, between Fifth and Sixth Avenues—Reached from the medical college by taking the Sixth Avenue Elevated Railroad at the corner of Ninth Avenue and Fifty-ninth Street, and leaving the cars at the corner of Fourteenth Street and Sixth Avenue; or by the surface cars.

This is a general hospital of the highest class, of one hundred and fifty beds, with an out-patient department.

The public clinics are the:

Medical—Mondays and Thursdays, at 2.30 P.M., from November to March; Professors DRAPER and PEABODY.

Surgical—Wednesdays, 2.30 P.M., February to June, Professor WEIR; Saturdays, 2.30 P.M., Professors WEIR and BULL; Mondays, 3 P.M., February to August, Dr. HARTLEY.

BELLEVUE HOSPITAL, Twenty-sixth Street and East River—Directly accessible from the college by the horse-cars of the Belt Line, which run from the door of the college to that of the hospital ; or, by leaving the horse-car at the corner of Fifty-ninth Street and Third Avenue, and taking the Third Avenue Elevated train to the corner of Third Avenue and Twenty-eighth Street.

This hospital has eight hundred beds and receives sixteen thousand patients annually, of whom one fourth are in the exclusive charge of officers of this college.

The service of the out-patient department also covers a great range of practice ; and two newly built operating theatres, a large and a smaller one, are in full use.

The following clinics are held here during the session :

Medical—Tuesdays, 2.30 P.M., Drs. ROOSEVELT and JAMES.

Surgical—Thursdays, 2.30 P.M., Drs. F. H. MARKOE and GALLAUDET.

Diseases of Children—Tuesdays, 2.30 P.M., from April to June, Professor JACOBI.

Genito-Urinary and Venereal—Tuesdays, 2 P.M., Professor TAYLOR.

ST. LUKE'S HOSPITAL, Fifth Avenue and Fifty-fourth Street.

Surgical—Dr. F. H. MARKOE gives a clinic to which students are admitted on Fridays at 2.30 P.M., from August to February.

PRESBYTERIAN HOSPITAL, Madison Avenue and Seventieth Street—Accessible from the medical school by the Fifty-ninth Street horse-cars of the Belt Line to Madison Avenue, and by the cars on this avenue to Seventieth Street.

This is a large general hospital of three hundred and thirty beds. The following clinics will be held here throughout the session :

Surgical—Tuesdays, 2.30 P.M.. Dr. MCCOSH.

Medical—Wednesdays at 2.30 P.M., and Saturdays at 3 P.M., Professor KINNICUTT.

CITY HOSPITAL, formerly CHARITY HOSPITAL, Blackwell's Island, East River—To reach this institution the steamer should be taken at the foot of East Fifty-second Street. This hospital offers a peculiarly rich field for the study of venereal diseases, over two thousand such cases being received yearly. Dr. HAYDEN gives a clinic as follows :

Genito-Urinary and Venereal—Wednesdays, 2 P.M., from October 1st to January 1st.

WILLARD PARKER HOSPITAL, foot of East 16th Street ; reached from the medical school by the cars of the Belt Line ; RIVERSIDE HOSPITAL, North Brother Island, East River ; reached by special boat from the foot of East 128th Street.

These hospitals, in charge of the New York City Health Department, offer a rich field for the study of *Contagious Diseases* not admitted to other hospitals in the city, such as diphtheria, scarlet fever, small-pox, typhus fever, measles, and others. Dr. J. W. BRANNAN gives a clinic to which students are admitted in small sections after special registration, on Tuesdays at 3 P.M., in November, December, March, and April.

NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 44 East Twelfth Street —Reached by the Sixth Avenue Elevated train, which should be left at the Fourteenth Street station ; or by the surface cars.

This hospital has thirty beds, and a large daily dispensary service is held for diseases of the eye and ear. Throughout the session the following clinic is held:

Ophthalmological—(Admission by invitation of sections.) Selected cases for diagnosis; the most important operations on the eye. Saturdays, 2.30 to 5 P.M. Professor KNAPP

Demonstrations of Pathological Anatomy

Autopsies are made at the Roosevelt, New York, Bellevue, and City Hospitals during the session before the students, and usually at regular hours. The hospital pathologists demonstrate and explain the lesions discovered. Notices of autopsies are posted upon the bulletin-board of the college.

The hours for autopsies are as follows:

ROOSEVELT HOSPITAL—2 P.M., Dr. HODENPYL

NEW YORK HOSPITAL—2 P.M.

BELLEVUE HOSPITAL—1 P.M., Dr. ELY

CITY HOSPITAL—Thursdays and Saturdays, Dr. VAN GIESON, at hours announced upon the bulletin-board.

LABORATORY WORK

See table of contents—Departmental statements.

HOSPITAL APPOINTMENTS

By a resolution of the Commissioners of Public Charities and Correction, the faculty of this college is entitled to nominate for appointment by the commissioners, after competitive examination in the college, its proportion of members of the house-staff of Bellevue Hospital; such members to be attached to that division of the said hospital which has been assigned to the care of the college.

Four nominations, two medical and two surgical, are made each year by the college from among its graduates under the above resolution.

One medical and one surgical assistant go on duty upon July 1st; in the same way one medical and one surgical assistant upon January 1st.

The choice as to character of service, and the time of beginning the same, is given to the successful candidates in the order of their merit.

The surgical nominees all serve the hospital for six months in each of the four grades of ambulance surgeon, junior assistant, senior assistant, and house surgeon; each one having thus a total of two years' experience on the "House-Staff."

The medical nominees serve each in the three grades of junior assistant, senior assistant, and house physician.

Similar positions are filled twice in each year, by public competitive examinations, open to graduates of this college, in the following institutions:

The "non-collegiate" division of Bellevue Hospital; the New York Hospital; the Roosevelt Hospital; St. Luke's Hospital; the City Hospital, Blackwell's Island; St. Vincent's Hospital; St. Francis' Hospital; the German

Hospital; the Mount Sinai Hospital: the Presbyterian Hospital; the Woman's Hospital; the Brooklyn Hospital; St. Catherine's Hospital, Brooklyn; St. Peter's Hospital, Brooklyn; the King's County Hospital, Flatbush, L. I.

ALONZO CLARK SCHOLARSHIP

See page 21.

FELLOWSHIPS

For the University Fellowships, see page 18.
For the Alumni Association Fellowships, see page 21.

PRIZES

For the Harsen Prizes for clinical reports, see page 21.
For the Harsen Prizes for proficiency at examination, see page 22.
For the Alumni Association Prize, see page 22.
For the Cartwright Prize, see page 23.
For the Stevens Triennial Prize, see page 23.
For the Joseph Mather Smith Prize, see page 23.

EXPENSES

See pages 15 and 17.

BOARD

Information in regard to board can be obtained from the secretary of the Students' Movement, through the Registrar, Mr. E. T. Boag, at his office in the college. Prices range from $5 to $9 per week.

CORRESPONDENCE

Letters requesting information should be addressed to George M. Tuttle, M.D., Secretary of the Faculty, 437 West Fifty-ninth Street, New York.

ADMISSION

1. Applicants for matriculation who declare themselves in writing not to be candidates for the degree of Doctor of Medicine from this college are admitted, without further formality, to matriculation as special students. Such applicants cannot subsequently become candidates for graduation at this college without full compliance with the terms of admission and graduation as set forth in this catalogue.

2. To all persons who matriculate with the intention of becoming candidates for the degree of Doctor of Medicine *at any medical school in the State of New York*, the following provisions of law are now applicable, viz.:

LAWS OF NEW YORK, 1893, CHAPTER 661, § 145 (IN PART).

"The degree of Bachelor or Doctor of Medicine shall not be conferred in this State before the candidate has filed with the institution conferring it, the certificate of the Regents that *three years before the date of the degree, or before or during his first year of medical study in this State*, he had either graduated from a registered college or satisfactorily completed not less than a three-years'

academic course in a registered academy or high school ; or had a preliminary education considered and accepted by the Regents as fully equivalent ; or had passed Regents' examinations in Arithmetic, Elementary English, Geography, Spelling, United States history, English composition, and Physics. Students who had matriculated in a New York medical school before June 5, 1890, shall be exempt from this preliminary education requirement, provided the degree be conferred before August 1, 1895."

Every person to whom this law applies, must, in pursuance thereof, before he can be admitted to final examination for the degree of M.D., file with the Secretary of the Faculty a MEDICAL STUDENT'S CERTIFICATE OF THE REGENTS OF THE UNIVERSITY OF THE STATE OF NEW YORK.

The conditions to be fulfilled in order to obtain this certificate are as follows :

A—Certificates without Examination

Candidates for a medical student's certificate having credentials which can be accepted in place of an examination under the act, must send their credentials to " UNIVERSITY EXAMINATIONS DEPARTMENT, ALBANY, N. Y." They will be examined and returned at once, and, if accepted, a medical student's certificate will be sent with them. If the certificate be delayed for verification of the candidate, when issued, it will be dated from receipt of the candidate's application, so that the candidate will lose no time.

The credentials, besides those referred to in the law, which the Regents accept in place of an examination under the act, may be ascertained by written application addressed to " UNIVERSITY EXAMINATIONS DEPARTMENT, ALBANY, N. Y."

B—Examinations under the Act

Candidates should notify the Regents' office at Albany, at least ten days in advance, stating at what time and in what studies they must be examined. They will at once be assigned the most convenient time and place.

Any person who does not obtain a medical student's certificate without examination, according to section A, must pass the examinations named in the law, or their equivalents, as allowed by the Regents, and referred to under section A.

The times, places, and subjects of these examinations are set forth on page 179. *On the dates specified, examinations will be held entirely under the charge of the Regents.*

GRADUATION

(See also " License to Practise Medicine," page 180.)

Every candidate in the four-years' course will be required, before admission to the degree of M.D. :

1. To present satisfactory evidence, as required by law, of good moral character, and of having attained the age of twenty-one years.

2. To present a " Medical Student's Certificate of the Regents of the University of the State of New York," as the evidence of preliminary education required by law (see page 181).

TIMES 1894-95	PLACES	EXAMINATIONS IN			
		Group 1, Language		Group 2, Mathematics Group 3, Science	Group 4, History and Social Science Group 5, Other Studies
		Modern	Ancient		
SEPTEMBER, 1894—The last Tuesday, Wednesday, and Thursday *i.e.*, 35-27	New York, Albany, Syracuse, Buffalo, For law and medical students only	Reading Writing Spelling English, elementary " advanced " composition German, 1st year " 2d year	Latin, 1st year	Arithmetic Algebra Plane geometry Physical geography Physics Physiology and hygiene	Geography English history United States history New York history Civics
NOVEMBER—Monday, Tuesday, and Wednesday of Thanksgiving week *i.e.*, 26-28	New York and about 200 academies and high schools	Reading Writing Spelling English, elementary " composition " literature	Cæsar's Comment.	Arithmetic Algebra Plane geometry Physics Physical geography Physiology and hygiene	Geography Greek history English history United States history Civics Economics Book-keeping Drawing
JANUARY, 1895—20th week from second Monday in September *i.e.*, 21-25	New York and about 160 academies and high schools	January and March: Reading Writing Spelling English, elementary " advanced " composition Rhetoric English literature Course in English reading German, 1st year French, 1st year	Latin, 1st year Cæsar's Comment. Cicero's Orations Virgil's Æneid Latin composition Greek, 1st year Xenophon's Anab. Homer's Iliad Greek composition	Arithmetic " advanced Algebra Plane geometry Solid geometry Plane trigonometry Astronomy Physics Chemistry Geology Physical geography Botany Zoölogy Physiology and hygiene	Geography Greek history Roman history English history United States history Civics Economics Ethics Book-keeping Drawing
MARCH—Week beginning second Monday *i.e.*, 11-15					
JUNE—40th week from second Monday in September *i.e.*, 10-14	New York and about 375 academies and high schools	Same as in January and March, and American literature Reading courses, 1-6 German, 2d year " 3d year French, 2d year " 3d year	Sallust's Catiline Ovid's Metamorph. Vergil's Eclogues	Algebra, advanced Physics, advanced Chemistry, advanced	General history New York history Psychology Stenography Drawing, advanced

3. To have attained to satisfactory standing in the required studies of the four years of the curriculum, including the elective course or courses chosen for the fourth year.

4. A candidate who shall have been admitted to advanced standing will be required to have spent not less than four academic years at the studies referred to in the clause next preceding; and to have complied successfully with the requirements for admission to advanced standing set forth on page 131.

No two academic years which shall have begun during the same calendar year will be held to satisfy the requirements of the present clause.

THE DEGREE OF MASTER OF ARTS

The degree of Master of Arts may be conferred upon students holding college degrees, who shall have completed with distinction the entire course of the School of Medicine, provided that in each case the candidate present a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of either the Faculty of Philosophy or the Faculty of Political Science, to the extent of one minor course, for not less than one year. (See page 119.)

LICENSE TO PRACTISE MEDICINE

The following extracts from the act regulating the practice of medicine in the state of New York are printed for the information of such graduates and students as may intend to practise medicine in this state:

Laws of New York, 1893, ch. 661

Previous laws relating to the practice of medicine were repealed May 9, 1893, when this new law took effect.

* * * * * * * * *

§ 141 STATE BOARDS OF MEDICAL EXAMINERS—There shall continue to be three separate State boards of medical examiners of seven members each, each of whom shall hold office for three years, from August 1 of the year in which appointed. One board shall represent the Medical Society of the State of New York, one the Homœopathic Medical Society of the State of New York, and one the Eclectic Medical Society of the State of New York. Each of these three societies shall at each annual meeting nominate twice the number of examiners to be appointed in that year on the board representing it. The names of such nominees shall be annually transmitted under seal by the president and secretary prior to May 1 to the Regents, who shall, prior to August 1, appoint from such lists the examiners required to fill any vacancies that will occur from expiration of term on August 1.

§ 145 ADMISSION TO EXAMINATION—The Regents shall admit to examination any candidate who pays a fee of $25.00 and submits satisfactory evidence, verified by oath if required, that he:

(1) Is more than twenty-one years of age; (2) is of good moral character; (3) has the general education required in all cases after August 1, 1895, prelimi-

nary to receiving the degree of Bachelor or Doctor of Medicine in this state * ; (4) has studied medicine not less than three full years, including three satisfactory courses, in three different academic years, in a medical school registered as maintaining at the time a satisfactory standard ; (5) has either received the degree of Bachelor or Doctor of Medicine from some registered medical school or a diploma or license conferring full right to practise medicine in some foreign country.

* * * * * * * * *

The Regents may in their discretion accept as the equivalent for any part of the third or fourth requirement, evidence of five or more years' reputable practice of medicine, provided that such substitution be specified in the license.

§ 146 QUESTIONS—Each board shall submit to the Regents, as required, lists of suitable questions for thorough examination in anatomy, physiology, and hygiene, chemistry, surgery, obstetrics, pathology, and diagnosis, and therapeutics, including practice and materia medica. From these lists the Regents shall prepare question papers for all these subjects, which at any examination shall be the same for all candidates, except that in therapeutics, practice, and materia medica all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate, and shall be in harmony with the tenets of that school as determined by its state board of medical examiners.

§ 147 EXAMINATIONS AND REPORTS—Examinations for license shall be given in at least four different places in this state, and at least four times annually, in accordance with the Regents' rules, and shall be exclusively in writing and in English. Each examination shall be conducted by a Regents' examiner, who shall not be one of the medical examiners. At the close of each examination the Regents' examiner in charge shall deliver the questions and answer papers to the board selected by each candidate, or to its duly authorized committee, and such board, without unnecessary delay, shall examine and mark the answers and transmit to the Regents an official report, signed by its president and secretary, stating the standing of each candidate in each branch, his general average, and whether the board recommends that a license be granted. Such report shall include the questions and answers, and shall be filed in the public records of the University. If a candidate fails on first examination, he may, after not less than six months' further study, have a second examination without fee.

If the failure is from illness or other cause satisfactory to the Regents, they may waive the required six months' study.

§ 148 LICENSES—On receiving from a state board an official report that an applicant has successfully passed the examinations and is recommended for license, the Regents shall issue to him, if in their judgment he is duly qualified therefor, a license to practise medicine. Every license shall be issued by the University under seal, and shall be signed by each acting medical examiner of the board selected, and by the officer of the University who approved the cre-

* See "Admission," page 177.

dential which admitted the candidate to examination, and shall state that the licensee has given satisfactory evidence of fitness as to age, character, preliminary and medical education, and all other matters required by law, and that after full examination he has been found properly qualified to practise. Applicants examined and licensed by other State examining boards registered by the Regents as maintaining standards not lower than those provided by this article, and applicants who matriculated in a New York State medical school before June 5, 1890, and who received the degree of M.D. from a registered medical school before August 1, 1895, may, without further examination, on payment of $10 to the Regents, and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a Regents' license issued after examination.

* * * * * * * * *

§ 149 REGISTRY—Every license to practise medicine shall, before the licensee begins practice thereunder, be registered in a book kept in the clerk's office of the county where such practice is to be carried on, with name, residence, place, and date of birth, and source, number, and date of his license to practise. Before registering each licensee shall file, to be kept in a bound volume in the county clerk's office, an affidavit to the above facts, and also that he is the person named in such license, and had, before receiving the same, complied with all requisites as to attendance, terms, and amount of study and examinations required by law and the rules of the University as preliminary to the conferment thereof; that no money was paid for such license, except the regular fees paid by all applicants therefor; that no fraud, misrepresentations, or mistake in any material regard was employed by any one or occurred in order that such license should be conferred. Every license, or, if lost, a copy thereof legally certified so as to be admissible as evidence, or a duly attested transcript of the record of its conferment, shall, before registering, be exhibited to the county clerk, who only in case it was issued or indorsed as a license under seal by the Regents, shall indorse or stamp on it the date and his name preceded by the words: "Registered as authority to practise medicine, in the clerk's office of . . . county." The clerk shall thereupon give to every physician so registered a transcript of the entries in the register with a certificate under seal that he has filed the prescribed affidavit. The licensee shall pay to the county clerk a total fee of one dollar for registration, affidavit, and certificate.

* * * * * * * * *

REGISTER OF STUDENTS

NAME	RESIDENCE
Burr Reeve Abbe, Jr., A.B.	Connecticut
Walter Sawyer Adams	Massachusetts
William Adler	New York City
Isidoro Agostini	Cuba
Edward Gurdon Aldrich	Connecticut
Archibald Fowler Alexander	New Jersey
Isaac Alkus	Brooklyn, N. Y.
Horace Russel Allen, Jr., A.B.	New York City
Emil Altman	New York City
Francisco Alvarado	Porto Rico
Raul Amador	U. S. of Colombia
George Anderson	New York
Harry Charles Anderson	New York City
Lewis Nostrand Anderson	Brooklyn, N. Y.
Samuel Ansbacher, B.S.	New York City
John Aquaro	New York City
Thomas Shaw Arbuthnot, A.B.	Pennsylvania
William Henry Areson	New Jersey
Patrick Henry Clay Arms	Connecticut
David Fitch Armstrong, A.B.	New York
George Albert Aschoff	Brooklyn, N. Y.
Charles Lewis Atkinson	Brooklyn, N. Y.
Thomas Hanlon Atkinson, A.B.	New Jersey
Alonzo Eugene Austin	New York City
James Cook Ayer, A.B.	New York City
Joseph Walter Babcock	New York City
Frederick Randolph Bailey, A.B.	New Jersey
Joseph Waddell Baird	New York City
William Hayden Baker, A.B.	New York
Samuel Harbourne Baldwin, A.B.	New Jersey
Charles Everett Banker, A.B.	New York City
George Wheelock Banning	New York City
Archie Henry Barkley	Kentucky
John Hendley Barnhart, A.B., A.M.	New York
Fred Stewart Baron	New Jersey
Thomas William Barrett	Oregon
Samuel Barshell	New York City

NAME	RESIDENCE
Herman Benjamin Baruch, B.S.	New York City
Walter Arthur Bastedo, Ph.G.	Canada
Arthur Loring Beals, A.B.	Massachusetts
Wright Butler Bean	Canada
Alfred Bell	Brooklyn, N. Y.
Max Benjamin	New York City
Harry Raymond Bennett	Connecticut
Joseph Vincent Bergin	New Jersey
Edward Bero	New York City
Charles White Berry	New York City
Charles Sweetser Benson	New York City
Charles Sylvester Bentley	New York City
Frederick James Bentley	Nebraska
Henry Rogers Bently	New York
Frederick Leslie Benton	Brooklyn, N. Y.
Horace Bigelow, A.B.	New York City
Arthur Walter Bingham, B.S.	New York City
James Birckhead, A.B.	Rhode Island
James Bishop, Jr., A.B.	New York City
Albert George Bising, A.B.	New Jersey
Harry Llewellyn Bixby, A.B.	California
John Stanton Blackmar	Connecticut
Edward Blaise	Brooklyn, N. Y.
James Eddy Blake, B.S.	Brooklyn, N. Y.
Prospero Celso Blanco-Gutierrez	Costa Rico
Jesse Leonti Bliss	Massachusetts
John Henry Blot	New York City
Edward Augustus Blount, Jr.	Texas
Henry Julius Blumensohn, B.S.	New York City
Alfonse Michael Bodden, A.B.	Wisconsin
Louis Albert Sayre Bodine	New Jersey
Martin Laurence Bodkin	Brooklyn, N. Y.
Walter Edward Boetzkes	New York
Belmont de Forest Bogart	New York
Clarence Hornbeck Bonnell, A.B.	New York
Adolph Bonner	New York City
Charles Herbert Borden	New Jersey
John Gerard Louis Borgmeyer	New Jersey
Joseph Wilbur Bourland	Texas
Leon Bowman	New York City
Gail Glen Bowman	Pennsylvania
John Newton Boyce	New York
William Augustus Boyd	New York City
Charles Edward Boynton, A.B.	Georgia
William Little Bradley, A.B.	New York
Charles Louis Adrien Brasseur	New York City

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Mordecai Robert Bren	New York City
James Henry Brennan	New York
Everett Clifton Brennand	Massachusetts
Marks Bresler	New York City
Walter Max Brickner, B.S.	New York City
James Francis Briody	New Jersey
Oliver Hart Bronson, A.B.	New York
Elias Galley Brown, A.B.	New York City
Edward Manning Brown	Massachusetts
Barton Wilbur Brush, M.D.	New York City
William Morton Bryan	New York
Samuel Adolph Buchenholz	New York City
Charles Frederick Buckley	Brooklyn, N. Y.
Frank Thomas Budd	Pennsylvania
William Buermann	New Jersey
Frank Putnam Buffum, M.D.	Illinois
Thomas Everett Bullard	New York
William Duff Bullard	New York City
Clarence Perciville Bulson	New York City
Edwin Martin Bullwinkel	Brooklyn, N. Y.
Maynard Gooding Burgess	Cuba
Edmund Burke	New York City
Martin Francis Burns, A.B.	Massachusetts
Oscar Augustus Burton	Minnesota
Archibald Henry Busby	New York
William Bushnell, M.D.	New York City
Joseph Byrne, A.M.	Nebraska
William Caldwell Calhoun	New York City
Clarence Wellington Campbell	New York City
James Edward Campbell	New Jersey
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Spencer Carleton, A.B.	New York City
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Herbert Swift Carter, A.B.	New York City
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George Fletcher Chandler	New York City
Robert Fendall Chapman, B.S.	New York City
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Albert King Chipp	New York City
Arthur Hutchins Cilley, A.B.	New York City
Jacob Westervelt Clark	New York City
James Bayard Clark	New Jersey

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John Rogers Clark, A.M.	Maine
Raymond Clark	New York City
Arthur Vernon Clarke	Canada
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Martin Cohen	New York City
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James Cantine Coles	New York
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John Hamilton Potter Conover	New York City
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Rowland Cox, Jr	New Jersey
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Henry Maclean Crawford	New York City
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Willis Hanford Crowe	Connecticut
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Harold Hammond Cummings	New Jersey
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Thomas Maltby Cunningham	British Columbia
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Lawrence George Distler	New York
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Joseph Smith Dodd	New Jersey
Franklin Abbott Dorman, A.B	New Jersey
Francis Oswald Dorsey, A.B	Indiana
Isaac Linton Doughty, Jr	Brooklyn, N. Y.
John Douglas, B.S	New York City
Edmund Le Roy Dow, M.S	New York
William Augustus Downes	Texas
Franklin Chace Downing	New York
William Lawrence Dudley, B.S	New York City
Walter Livingston Dunning	New Jersey
William Meddaugh Dunning, M.D	New Jersey
James Walter Dunphy	New York City
John Franklin Dunseith	New York City
Jay Harvey Durkee	Florida
John Watson Durkee	Kentucky
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Basil Hicks Dutcher, Ph.B	New York City
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Francis Cruger Edgerton, B.S	Connecticut
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Herbert H. Ellis	New York
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Philip Embury	New Jersey
Robert Emmet	New York City
Floyd Bonesteel Ennist	New York
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Edgar Horace Farr	Vermont
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Peter Leo Fitz Simons	New York City
Alston Fitts, A.B., LL.B.	Alabama
Charles Francis Fitzgerald, A.B.	Massachusetts
Frederic Hoole Floy, A.B.	New Jersey
Joseph Norman Fogarty	New York City
Howard Sinnickson Forman	New Jersey
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Russell Story Fowler	Brooklyn, N. Y.
Samuel Wallace Fowler, Ph.G.	Alabama
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Benjamin Butler Frankle	Colorado
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Samuel Friedman	New York City
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William Gaugh, Jr.	New Jersey
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Peter Gilsey, Jr.	New York City
Abraham Glickstein	New York City
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Sydney Ormond Goldman	New York City
Carl Goldmark	New York City
Henry Goodfriend	New York City

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Isham Hamilton Goss, M.D.	Georgia
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Venzo Grant	Ohio
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Nathan Williams Green, A.B.	Massachusetts
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Chauncey Boyd Griffiths, A.B.	New Jersey
Henry Michael Groehl, Ph.G.	New York City
Moritz Gross	Massachusetts
Samuel Bates Grubbs, A.B.	Indiana
Leopold Frederick William Haas, B.S.	New York City
Sidney Haas	New York City
Charles Alfred Haffner, A.B.	New York City
Henry Ewing Hale, Jr., A.B.	New York City
Charles Edward Hall, B.S.	Michigan
James Schermerhorn Hall	New York City
George Tillinghast Hammond, Jr.	Brooklyn, N. Y.
James Taylor Hanan	Brooklyn, N. Y.
John Henry Bray Hanify	New York City
Whitfield Harral	Texas
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Reed Ferris Haviland	New York
Allen Hazen, A.B.	Vermont
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Ruben Johnson Held	New York City
George Henriquez	New York City
Edmund Taylor Henry	New Jersey
Franklin Miller Herman	New York
Alexander Martin Heron	New Jersey
William Post Herrick, A.B.	New York City
Charles Herrman	New York City
William Leo Hetherington	New Jersey
Harold Edmonds Hewlett, Ph.B.	New York
Christopher Arthur Hibler	New Jersey
Elias Pierre Hicks	New York
Albert Theodore Hinrichs	New Jersey

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Roy Seymour Hinsdale, A.B.	New York
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William Grant Hogg	New York City
Fenimore Cooper Hoke	New York
Henry William Diedrich Holling	New York City
Edwin Holmes, A.B.	New York City
James Fred Holmes, A.B., A.M.	New York City
Joseph Scripture Holroyd	Connecticut
John Horni	Brooklyn, N. Y.
Charles Beardsley Horton	New York City
Charles James Howard	Rhode Island
Edgar John Howarth	New York
Ernest Valentine Hubbard, A.B.	New York City
Charles Huber, Ph.G.	New York City
Frederick William Huber	New York City
John Lawrence Hughes	New York City
Gustavus Adolphus Humphreys	Arkansas
Harry Richard Humphries	New York City
Allston Frost Hunt, M.D.	Massachusetts
Charles Frederick Hunt	New York
Edward Livingston Hunt, A.B.,	New York City
Elon Obed Huntington, B.S.	Minnesota
Lee Maidment Hurd	New York
Augustus Alphonso Hussey, A.B.	Maine
Robert Morton Hutton	New Jersey
David Jacob Hyman	Brooklyn, N. Y.
Julius Hyman, A.B.	New York City
Owen Ambrose Igoe	New York
Robert Franklin Ives	New Jersey
Sherwood Bissell Ives, A.B.	New York City
Charles William Ivie, A.M.	New York City
Elias Simeon Jackson	New York City
Meyer Jacobstein	New York City
Theodore Israel Jacobus, B.S.	New York City
James Ralph Jacoby, A.B.	New York City
Charles Herman Jaeger	New York City
Theodore Caldwell Janeway, Ph.B.	New York City
Henry Harrington Janeway, A.B.	New Jersey
Benjamin Yeager Jaudon	Missouri
Ernest Potter Jenks, A.B.	New York City
Charles H. Johnson	New York City
Daniel Herbert Johnson	Ohio
Edward West Johnson	New Hampshire
William Throckmorton Johnson, A.B.	New Jersey
William Cameron Johnstone	New Jersey

NAME	RESIDENCE
John Morgan Jones	New Jersey
Franklin Miter Jones	New York City
William Mudd Jordan	Alabama
Charles Samuel Josephs	New York City
Homer Thrall Joy, A.B.	New Jersey
Edgar Collins Joyce	New York City
Aspinwall Judd	New York City
Herman Judkowitz	New York City
Julius Jungmann	New York City
William Lawrence Kantor	New York City
Morris Karash	New Jersey
Ernest Kaufman	New Jersey
James Edward Keegan	New Jersey
Henry Chrysostom Keenan, A.B.	New York
Edward Leland Kellogg	New York City
Kenneth Evernghim Kellogg	Connecticut
Henry Thomas Kelly	New York City
Robert Dalton Kelly	Tennessee
James Henry Kenyon, B.S.	New York
Thomas Alexander Kenyon	New York City
Carl Richard Keppler	New Jersey
Eugene George Kessler, Ph.G.	New York City
Edward Loughborough Keyes, A.B.	New York City
Theron Wendell Kilmer	New York City
Sumner Butler Banks Kingsley	New York City
William Thomas Charles Klein	New York City
Walter Leo Kline, A.B.	Ohio
Walter Carl Klotz	New York City
Charles Platt Knowles	New York
Albert Edwin Koonz	New Jersey
Francis Anthony Kopecky	New York City
Samuel Joseph Kopetzky	New York City
Aaron Samuel Koransky	New York City
Conrad Piser Kornreich	New York City
Theodore Morse Koupal	New York City
John B. Kouwenhoven, A.B.	New York
William Joseph Kramer	New York City
Henry Kreuder, Ph.G.	New York City
Carl Henry Kroeber	New York City
Edmond John Labbé	Oregon
James Rudolph Laird	New Jersey
Adrian Van Sinderen Lambert, A.B.	New York City
George Francis Lamont	Brooklyn, N. Y.
Edward Rutledge Lampson, Jr., A.B.	Connecticut
William Judson Lamson, A.B.	New York City
Sidney Locock Lasell, A.B.	New York City

NAME	RESIDENCE
George Alfred Lawrence, A.B.	California
William Henry Lawrence, Jr.	New Jersey
William Tilson Lawson	New York City
Daniel Wunderlich Layman, B.S.	Indiana
Medwin Leale, A.B.	New York City
Prescott Le Breton, A.B.	New York City
Emanuel David Lederman	New York City
Burton James Lee, Ph.B.	Connecticut
George Bolling Lee	Virginia
Harry Mower Lee	Connecticut
Henry Thomas Lee	Minnesota
Theodore Alexander Lehmann	New York City
Oscar Leiser	New York
Arnold Gustave Leo	New York City
John Leshure	Massachusetts
Louis Lesinsky, A.B.	New York City
Hugo Adolph Levison	New York City
Morris Levy, A.B.	New York City
Leon Theodore Lewald	Iowa
John Cadwallader Lewis	Kentucky
George Washington Lindheim	New York City
George French Little	Brooklyn, N. Y.
John Othello Logan	New York City
William Henry Long	New Jersey
Eli Long, Jr., A.B.	New Jersey
Arthur Hubert Longstreet	Brooklyn, N. Y.
Arthur Jewett Lougee, A.B.	New Hampshire
Joseph Tompkins Low, Jr., B.S.	New York City
Grosvenor Porter Lowrey	New York City
Robert Barkley Ludington, B.S.	New York City
George Floyd Ludlow	New York
Frederick Martin Luther, M.D.	New York City
Stephen Henry Lutz	Brooklyn, N. Y.
Palmer Heath Lyon	New York City
Victor Alfred Lyon	New York City
Henry Graham MacAdam	New York City
William Wallace MacAlister	New Jersey
Cecil Laurence MacCoy	New Jersey
Robert Langdon Macdermott	New Jersey
Robert Stuart MacGregor, A.B.	New York City
Henry Alexander MacGruer	New York
Walter Fullarton Macklin	Brooklyn, N. Y.
James Wright MacNider	New York City
John Silliman Macnie, A.B.	North Dakota
Montefiore Levy Maduro	New York City
Frank Hosmer Magness	New York City

NAME	RESIDENCE
Edward O'Reilly Maguire	Connecticut
Bartholomew Edward Mahaney	Massachusetts
Frank Wickham Mallalieu, B.S.	New Jersey
Edward Rodert Maloney	Connecticut
Max Mandelbaum	New York City
Leopold Marcus	New York City
David Trumbull Marshall	New Jersey
Jeremiah Neil Martin, A.B.	New York City
John Miller Masury	New York City
Walter Frederick McCabe, Ph.B.	North Dakota
Edward John McCarthy	Connecticut
Harvey McCloughan	New Jersey
William Henry McComb	New Jersey
Robert Hall McConnell	New York City
William Thomas McConvill	New Jersey
Arthur Thomas McCormack, A.B.	Kentucky
Daniel Leo McCormick	New Jersey
John Joseph McCoy	New York City
Hugh Farber McGaughey, B.S.	Minnesota
Arthur Francis McGinn, A.B.	Rhode Island
Michael Joseph McHale, Jr.	Rhode Island
James Nicholas McKone, A.B.	Connecticut
Dice McLaren, M.S.	New Jersey
Wharton Bird McLaughlin	Texas
Frank Harold McLaury	New York City
Harlow Comstock McLeod	Brooklyn, N. Y.
Thomas William McManus	New York City
John English McWhorter	New York
William Henry McWilliam	New York City
Clarence Arthur McWilliams, A.B.	Brooklyn, N. Y.
Frank Sherman Meara, A.B., Ph.D.	Massachusetts
Howard Valentine Merrell	New Jersey
William Jay Mersereau	New York
Leo Bernard Meyer, A.B.	New York City
Alfred Michaelis, A.B.	New York City
Emery Austin Miller	New York City
Guy Bryan Miller, A.B.	New York
Jesse Preston Miller, A.B.	South Carolina
John Henry Miller	New York City
Richard Thomas Miller	New York City
Roger Harrison Miller, Ph.B.	Ohio
Samuel Osgood Miller	Massachusetts
William Elphinstone Keith Mittendorf	New York City
Philip William Moeller	New York
Augustine Joseph Molloy	New York
George Swan Mooney, Ph.G.	New York City

NAME	RESIDENCE
Bernard Wise Moore, A.B., M.D	Virginia
Harold James Morgan	New York
Browne Morgan	New Jersey
Edward Moriarty	New York
William Thomas Morrey, A.B., A.M	New York City
Moses Morris	Illinois
Paul Morrison	Ohio
John Bennett Morrison	Canada
George Westlake Morse	New York
Henry Perkins Moseley, A.B	New York City
L. Howard Moss	Canada
Emil Alfred Müller	New York City
Wesley Thomas Mulligan, Ph.B	New York
Adolph Mund, Ph.G	New York City
Deas Murphy, A.B	New York City
John William Nelson, A.B	New York City
Irving La Field Nettleton	Connecticut
Denwood Norval Livingston Newbury	New York City
Lorenzo Miller Nickerson	New York
Henry Nolte	Wisconsin
Carl Jonas Ericsson Nordstrom	New York City
Edward Genung Nugent, A.B	New York
Joseph Henry O'Connell, A.B	Massachusetts
Bernard Leo O'Donnell	Rhode Island
James Coughlin O'Donnell, A.B	Massachusetts
Michael William O'Gorman, A.B	New Jersey
Joseph Berchman O'Neill, A.B	Rhode Island
Charles Ray Otis	New York
Frank Burton Otis, A.B	Massachusetts
Frederic Francis Owens, A.B	Massachusetts
Henry Farrar Owsley, Ph.G	Ohio
Frederic Chauncey Paffard	Brooklyn, N. Y.
Frank Elmer Pagett	New York
Edwin Obediah Palmer	New York
Edward Oliver Parker, A.B	New York City
George Mitchell Parker, A.B	Ohio
Jacob Hohanness Parseghian, A.B	Asia Minor
Horace Wilbur Patterson	New York City
George Stark Pearce	New York
Victor Cox Pedersen, A.B	New York City
Henry Hubbard Pelton, A.B	Connecticut
Judson Philbrook Pendleton	Maine
John Condit Pennington, M.D	New York City
Dwight Townsend Penny	New York
Guy Sherman Peterkin	New York City
James Edward Pettus	Brooklyn, N. Y.

NAME	RESIDENCE
William Robert Pfeuffer, B.S.A., Ph.G.	Texas
Charles Dickinson Phelps, A.B.	Connecticut
Paul Chrysostom Phillips, A.B.	New York City
Antonio David Pisani, Ph.G.	New York City
Anthony Joseph Pixley	Connecticut
Morris Pollack	New York City
Nelson Asa Pomeroy	Connecticut
Walter Bonamy Power	New Jersey
Henry James Prentiss, M.E.	New York City
Albert Ward Preston, A.B.	Maine
Edgar Burton Probasco	New York
Norman Hayes Probasco	New Jersey
Louis Frederic Psotta	New York City
Myles Purvin	Brooklyn, N. Y.
Immanuel Pyle	New Jersey
George Rauchfuss	New York City
Arthur Lynnewood Reeve	Brooklyn, N. Y.
William Stewart Reoch, B.P.	Rhode Island
Jerome Rice	New York City
Strother William Rice, A.B.	New Jersey
Emil Gustave Ring	New York City
George Johnson Rittenhouse	New York City
Francisco Rivera-E.	South America
Dudley De Vore Roberts	New Jersey
Jonathan Manning Roberts	New Jersey
Frank Wade Robertson	New York
Fielding Tecumseh Robeson, A.B.	New York City
John Alexander Robinson	New York City
Joseph Robinson, Jr.	Connecticut
Charles Thomas Robinson, A.B.	New York City
Joseph Roby, A.B.	New York
Albert Vincent Rockwell	New Jersey
Harry Rodman, A.B.	New York City
Harry Heth Rodman	New York City
William Homan Roe	New York
Edward Nicholas Roeser, B.S.	New York City
Augustine Ward Roff, Jr.	New Jersey
John Albert Ronayne, A.B.	Massachusetts
Stephen White Roof, Jr.	New York City
William Henry Rorke	Brooklyn, N. Y.
Leoncio Ros	New York City
Malcolm Cameron Rose	New York City
Edwin Leopold Rose	New York City
Edward Aaron Rosenberg	New York City
Louis Rosenwasser	New York City
Clark Green Rossman, C.E.	New York

NAME	RESIDENCE
Thomas Albert Rothwell	New York City
Solomon Rottenberg	New York City
Henry Clay Ruhl, A.B	New York City
Emil Albin Rundquist, B.S	New York City
William Marcus Russell	Brooklyn, N. Y.
Thomas Eugene Ryan	New York City
Walter Gohring Ryon	New York
Stanley Owen Sabel	Kentucky
Philip Schieffelin Sabine, A.B	New York City
Juan Bautista Sacasa	Central America
Moses Sahud	New York City
Trafford Brasee Salisbury	New York City
George Reese Satterlee, A.B	New York City
George Alexander Saxe	New York City
Peter Schaeffler, Jr	New York City
Philip Michael Schaffner	Brooklyn, N. Y.
Robert McEwen Schauffler, A.B	Missouri
Michael Schiller, B.S	New York City
Winfield Scott Schley, Jr., A.B	New York
Charles Henry Schlichter, Ph.G	New Jersey
Adam Emil Schmitt	New York City
Edward Schnaper	New York City
William Augustus Muhlenberg Schnecker	New York City
Warren Schoonover, Jr	New York City
Alfred Schwab	New York City
Samuel Emanuel Schwartz	New York City
Herman Schwarz	New York City
John William Scott, A.B	Kentucky
Ambrose Alfonse Scouler, A.B	New York
Daniel Joseph Scully, Jr	Brooklyn, N. Y.
Frank Walker Sears	New York
Edgar Calvin Seibert	New Jersey
John Conlay Selby	New York City
George Henry Semken	New York City
Jerome Holbrook Sewell	New York City
Charles Reeve Sewell	New York City
James Bernard Shannon, Jr., A.B	Connecticut
Raymond Wilbur Shattuck	New York City
Philip Sheridan Shaughnessy	Utah
James Daniel Shea	Brooklyn, N. Y.
Peter Owen Shea, A.B	Massachusetts
John Lawrence Sheils	New York City
Forrest Shepherd, A.B	Connecticut
George William Shera, A.B	New Jersey
Arthur Louis Sherrill	New York
Walter Aikman Sherwood	New Jersey

NAME	RESIDENCE
John Aloysius Shields	Brooklyn, N. Y.
Percy John Shute	New York City
Montgomery Hunt Sicard, B.S.	New Hampshire
Ernest Frederick Sickenberger, Ph.G.	New York City
Malcolm Toland Sime, C.E.	California
William Ginnel Simmons	Brooklyn, N. Y.
Edward Henry Harriman Simons	New York City
James Gordon Hamilton Simpson	New York City
Daniel Alison Sinclair	New York City
Walter Thomas Slevin	Brooklyn, N. Y.
Letchworth Smith, A.B.	New York
Rev. William Walter Smith, A.B., A.M.	New York City
Robert Newhall Smith	New Jersey
Thomas Allison Smith	New York City
William Gardner Smith, M.D.	South Dakota
Jacob Sobel, A.B.	New York City
Lazarus Sylvester Sobel, M.D.	New York City
John Beach Solley, Jr., A.B.	Brooklyn, N. Y.
Paul Frederick Sondern	Brooklyn, N. Y.
Frederick Hessler Sparrenberger	Brooklyn, N. Y.
Shirley Erving Sprague	New York City
Louis John Frederick Staack	New York City
Harry Grant Stafford	New York City
Frank Munson Stagg	New Jersey
Charles Daniel Steenken, A.B.	Maryland
Edwin Sturtevant Steese, M.D.	New York City
Victor Steinberger, A.B.	New York City
Samuel Stern	New York City
Harry Gifford Steward	Connecticut
Archibald Wilson Stiles	New York
Harry Wilson Stiles	Missouri
William Harvey Stilson	New Jersey
Richard Stinson	New Jersey
Henry Stock, B.S.	New York City
James Graham Phelps Stokes, Ph.B.	New York City
James Stephen Stout	New Jersey
Walter Whitcomb Strang	New York City
August Adrian Strasser	New Jersey
Israel Strauss, A.B.	Rhode Island
Roe Latham Strong	New York
Carlyle Edgar Sutphen, Jr., A.B.	New Jersey
James Robert Swanick	New York
Dennis Joseph Sweeney	Brooklyn, N. Y.
Richard Edward Sweeney	New York City
Paul Gerald Taddiken	New York City
Samuel Aaron Tannenbaum	New York City

NAME	RESIDENCE
Robert Wood Tate	Tennessee
Alfred Simpson Taylor, A.M	Rhode Island
John Mortimer Taylor, A.B	New York
Joseph Charles Taylor	New York
Jonathan Edwards Tefft, Jr	Missouri
Arthur Henry Temple	New Jersey
Arthur Seymour Tenner, A.B	New York City
William Stoutenborough Terriberry, A.B	New York City
Howard Stephen Thayer	New York
William Ephroditus Thomas	New York City
Joseph Cheesman Thompson	New York City
Edward Osgood Thorn	New York
Victor Corse Thorne	New York City
Moses Thorner	Georgia
Frederick Tiedemann, Jr	New York
Charles Brundage Tiernan, Ph.G	New Jersey
Joseph Reynolds Tillinghast, Jr	New York City
Walter Timme, B.S	New York City
Leo Tobias, B.S	New York City
Frank Edward Tompkins	New York City
Ralph Tousey, A.B	New York City
Robert Storer Tracy, A.B	New Jersey
Walter Day Trenwith	California
Leslie Allin Turner	Brooklyn, N. Y.
Percy Rivington Turnure, A.B	New York City
Guy Hanford Turrell, A.B	New York City
Sidney Ulfelder, A.B	New York City
James Samuel Unger	New York City
Adolph Urban, B.S	New York City
Ignacio Vado, Jr., A.B	Mexico
Herbert Bailey Vail, A.B	New York
Charles Auguste Valadier, A.B	New York City
Gilbert Julius Van der Smissen	New York City
William Percy Van Ness	New York City
Frank Joseph Van Noort	New Jersey
Frank M. Van Orden, A.B	New York
Philip Schuyler Van Patten	New York City
Arthur Ward Van Riper, A.B	New Jersey
Albert Myers Van Sickle, Ph.G	New York City
Frederick Van Vliet	New Jersey
William Remsen Varick	New York
Henry Palmerston Vaughan	New York City
William Welsh Vibbert, A.B	New York City
Augustus Baldwin Wadsworth, B.S	New Jersey
Charlton Wallace, A.B	Kentucky
Fred Cole Wallin	New York

NAME	RESIDENCE
Asbury Fountain Walling, Jr.	New Jersey
George John Wardenburg, A.B.	Brooklyn, N. Y.
Ernest Coniston Waterhouse, A.B.	Hawaii
John Sherreaf Waters, A.B.	New York City
Warren Byers Watkins, A.B.	Georgia
Justin Miner Waugh, Jr., Ph.B.	Ohio
Walter Duval Webb	New York City
Henry Goodwin Webster, A.B.	Brooklyn, N. Y.
Stuart Webster, A.B.	Illinois
Howard Rankin Weirick, B.S.	Pennsylvania
Stephen Whitaker Wells.	New Jersey
Charles Augustine Wells	New Jersey
George Oakley Welshman	New Jersey
John Welzmiller, Ph.G.	New York
William Edward West, A.B.	New York
Walter Wettengel	New York City
John Sebastian Wever	Kansas
Claude Lamont Wheeler, A.B., M.D.	New York City
David Everett Wheeler	New York City
Lyman Hall Wheeler	New York
Elmer George Wherry, A.B.	New Jersey
Harry Draper White	New York
Frederick Newton Whitehorne, A.B.	New York City
Charles Allen Whiting, A.B.	New York City
James Raynor Whiting, Jr., A.B.	New York City
Henry Mott Whittemore	New York City
Ernest Nash Wilcox, A.B.	New York City
Adrian Dorsey Williams	Brooklyn, N. Y.
Charles Mallory Williams, A.B., Ph.B.	Brooklyn, N. Y.
Howard Crosby Williams	New York City
William Edwin Williams	Tennessee
William Robert Williams, A.M.	Minnesota
Henry Christie Williamson	New York City
Edward Temple Willson	New York City
William Robert Anthony Wilson, A.B.	New York City
Harry Wilson	New York City
Isaac Max Wilzin	Brooklyn, N. Y.
Henry Wintsch	New Jersey
Edward Darrah Wisely	New York
Abraham Leo Wolbarst	New York City
Jacob Burdette Wolf	New Jersey
Ferdinand Charles Wolff	New Jersey
William Cavan Woolsey	New Jersey
Goodall Harrison Wooten, B.S., A.M.	Texas
Joe Sil Wooten, B.Sc.	Texas
Arthur Brownell Wright, A.B.	Minnesota

NAME	RESIDENCE
Charles Edward Wright	Indiana
John Henry Wurthmann, Ph.G	New York City
Daniel Woodbury Wynkoop	New York City
Edward Hillman Yale	New York
Andrew Benedict Yard	New York City
Vincent Jay Youmans, Ph.B	New York
Roy Demas Young, Phar.M., B.S	New York
William Bellamy Young	Brooklyn, N. Y.
John Luis Zabala, B.S	California
Fred Templeton Zabriskie, A.B	New York City
Charles Cowing Zacharie	New York
Charles Henry Bernard Zeiser	New York
August Zinsser, Jr., A.B	New York City

Total 786

SCHOOL OF MINES

The following departments are represented in the Faculty :

ARCHITECTURE
ASTRONOMY
CHEMISTRY
CIVIL ENGINEERING
ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
GEOLOGY
MATHEMATICS
MECHANICS
MINERALOGY and METALLURGY
MINING
PHYSICS

Officers of the Faculty

CHARLES F. CHANDLER, Ph.D., M.D., LL.D. . . . *Dean and ex-officio Member of the University Council*
WILLIAM R. WARE, B.S. *Elected Delegate to University Council*

Standing Committees

COMMITTEE ON ADMISSIONS AND EXAMINATIONS

Professor Chandler
" Van Amringe
" Munroe

COMMITTEE ON SPECIAL STUDENTS

Professor Chandler
" Hutton
" Hamlin

Faculty

SETH LOW, LL.D., *President*

THOMAS EGLESTON, E.M., Ph.D., LL.D., *Professor of Mineralogy and Metallurgy*
CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*
J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*
OGDEN N. ROOD, A.M., *Professor of Physics*
HENRY S. MUNROE, E.M., Ph.D., *Professor of Mining*
WILLIAM R. WARE, B.S., *Professor of Architecture*
FREDERICK R. HUTTON, C.E., Ph.D. *Professor of Mechanical Engineering*

JOHN K. REES, A.M., E.M., *Professor of Astronomy and Director of the Observatory*
PIERRE DE PEYSTER RICKETTS, E.M., Ph.D., *Professor of Analytical Chemistry and Assaying*
*JASPER T. GOODWIN, A.M., LL.B., *Adjunct Professor of Mathematics*
ALFRED D. F. HAMLIN, A.M., *Adjunct Professor of Architecture*
ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*
CHARLES E. COLBY, E.M., C.E., *Adjunct Professor of Organic Chemistry*
*JAMES L. GREENLEAF, C.E., *Adjunct Professor of Civil Engineering*
FRANK DEMPSTER SHERMAN, Ph.B., *Adjunct Professor of Architecture*
JAMES F. KEMP, E.M., *Professor of Geology*
ROBERT PEELE, Jr., E.M., *Adjunct Professor of Mining*
FRANCIS B. CROCKER, E.M., *Professor of Electrical Engineering*
WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*
WILLIAM H. BURR, C.E., *Professor of Civil Engineering*
ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

NOTE: For details as to other officers of instruction see departmental statements.

Courses of Instruction

The School of Mines offers seven technical courses leading to professional degrees. These courses consist of required work. In addition, the school offers a graduate course leading to the professional degree of Sanitary Engineer. Besides this professional instruction the school permits certain subjects to be studied in partial fulfilment of the requirements for the degrees of A.B., A.M., and Ph.D. For the sake of clearness, the necessary information as to these different kinds of work is set forth in three parts, numbered respectively I, II, III.

Part I

UNDERGRADUATE COURSES FOR THE PROFESSIONAL DEGREES

1	Mining Engineering	leading to degree of	E.M.
2	Civil Engineering	" " " "	C.E.
3	Electrical Engineering	" " " "	E.E.
4	Metallurgy	" " " "	Met. E.
5	Geology and Palæontology	" " " "	B.S.
6	Analytical and Applied Chemistry	" " " "	B.S.
7	Architecture	" " " "	B.S.

* Absent on leave

COURSE IN MINING ENGINEERING

First Year

First Term

TRIGONOMETRY (Mathematics IV*)—4 hours, first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours, second part of term. MR. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory. Professor MOSES, Dr. LUQUER, and Mr. WHITLOCK

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

SURVEYING (Civil Engineering I)—2 hours. Mr. FOYÉ and Mr. BLACK

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

DESCRIPTIVE GEOMETRY AND DRAWING } (Mechanical Engineering I)—2 hours, and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Summer Vacation

SURVEYING (Civil Engineering XIV). Mr. FOYÉ

* Roman figures refer to departmental statements pages 29–118

COURSE IN MINING ENGINEERING

Second Year

First Term

Analytical Geometry and Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physics (Physics III)—2 hours. Professor Hallock

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Biology, Zoölogy (Biology I)—1 hour. Dr. Dean

Mineralogy (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor Moses and Dr. Luquer

Excavation and Tunneling (Mining I)—3 hours. Professor Peele

Drawing (Mechanical Engineering I)—Drawing-room practice. Mr. Mayer

Second Term

Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Quantitative Analysis (Chemistry XVI)—2 hours, and 15 hours laboratory practice. Professor Ricketts and Dr. Miller

Biology, Zoölogy (Biology I)—1 hour. Dr. Dean

Optical Mineralogy (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Dr. Luquer

Lithology (Geology V)—2 hours and 1 afternoon for 2 months. Professor Kemp

Boring and Shaft Sinking (Mining II)—2 hours. Professor Peele

Mine Surveying (Mining IX)—1 hour. Mr. Durham

Drawing (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. Mayer

Summer Vacation

Practical Mining (Mining XI) *optional*—5 weeks. Professor Peele and Mr. Durham

Geological Field Work—1 week. Professor Kemp

Surveying (Civil Engineering XIV). Mr. Foyé

COURSE IN MINING ENGINEERING

Third Year

First Term

Analytical Mechanics (Mechanics I)—3 hours. Professor Woodward

Assaying (Chemistry XXI)—4 hours, and 3 afternoons and Saturday, 15 hours laboratory practice. Professor Ricketts and Dr. Miller

Geology (Geology II)—3 hours. Professor Kemp

Elasticity and Resistance of Materials (Civil Engineering V)—3 hours. Professor Burr

Properties of Materials (Mechanical Engineering V)—2 hours. Professor Hutton

Mining (Mining III)—4 hours. Professor Munroe

Metallurgy (Metallurgy I)—4 hours. Professor Egleston and Mr. Struthers

Design, Problems (Civil Engineering V)—2 afternoons. Professor Burr and Mr. Foyé

Second Term

Analytical Mechanics (Mechanics I)—3 hours. Professor Woodward

Geology (Geology II)—3 hours. Professor Kemp

Elasticity and Resistance of Materials (Civil Engineering V)—2 hours. Professor Burr

Properties of Materials (Mechanical Engineering VI)—2 hours, and laboratory work. Professor Hutton, Mr. Woolson, and Mr. Gregory

Electrical Engineering (Electrical Engineering V)—2 hours, and 1 afternoon practical work. Professor Crocker

Ore Dressing (Mining IV)—4 hours. Professor Munroe

Metallurgy (Metallurgy II)—4 hours. Professor Egleston and Mr. Struthers

Graphical Statics (Civil Engineering VI)—2 hours. Mr. Tuska

Design, Problems (Civil Engineering V and VI)—Afternoon work. Professor Burr and Mr. Foyé

Summer Vacation

Practical Mining (Mining XI)—5 weeks. Professor Peele and Mr. Durham

Geological Field Work—1 week. Professor Kemp

Railroad Surveying (Civil Engineering XV). Mr. Foyé

COURSE IN MINING ENGINEERING

Fourth Year

First Term

Economic Geology (Geology III)—3 hours, lectures and conferences. Professor Kemp

Management of Boilers (Mechanical Engineering IX)—2 hours. Professor Hutton

Thermodynamics (Mechanics IV)—3 hours. Professor Pupin

Heat and its Applications (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor Hutton and Mr. Gregory

Motors (Mechanical Engineering XI)—1 hour. Professor Hutton

Machinery and Mill Work (Mechanical Engineering XIII)—2 hours. Mr. Woolson

Mine Engineering (Mining VI)—2 hours. Professor Munroe

Mine Plant (Mining VII)—3 hours. Professor Peele

Metallurgy (Metallurgy III)—4 hours. Professor Egleston and Mr. Struthers

Hygiene

Design of Mine Plant (Mining VIII)—5 afternoons. Professor Peele

Second Term

Economic Geology (Geology III)—3 hours, lectures and conferences. Professor Kemp

Management of Engines (Mechanical Engineering X)—4 hours. Professor Hutton

Heat and its Applications (Mechanical Engineering VIII)—2 hours. Professor Hutton

Dynamics of Engineering (Mechanical Engineering XII)—1 hour. Professor Hutton

Machinery and Mill Work (Mechanical Engineering XIII)—2 hours. Mr. Woolson

Mine Engineering (Mining VI)—2 hours. Professor Munroe

Mine Plant (Mining VII)—2 hours. Professor Peele

Mine Administration (Mining X)—1 hour. Professor Munroe

Ore Dressing (Mining V)—1 afternoon first half of term. Professor Munroe

Ore Testing (Chemistry XXIII)—1 afternoon last half of term. Professor Ricketts and Dr. Miller

Metallurgy (Metallurgy III)—4 hours. Professor Egleston and Mr. Struthers

Hygiene

Design of Mine Plant (Mining VIII)—5 afternoons. Professor Peele

Project or Thesis in Mining

COURSE IN CIVIL ENGINEERING

First Year

First Term

TRIGONOMETRY (Mathematics IV)—4 hours, first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours, second part of term. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

SURVEYING (Civil Engineering I)—2 hours. Mr. FOYÉ and Mr. BLACK

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and drawing-
DRAWING } room practice. Mr. MAYER and Mr. HARRINGTON

Summer Vacation

SURVEYING (Civil Engineering XIV). Mr. FOYÉ

COURSE IN CIVIL ENGINEERING

Second Year

First Term

Analytical Geometry and Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physics (Physics III)—2 hours. Professor Hallock

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushmann

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Minerals of Building Stones (Mineralogy IV)—2 hours lectures and 1 afternoon laboratory. Dr. Luquer

Road Engineering (Civil Engineering II)—2 hours. Mr. Foyé

Excavation and Tunneling (Mining I)—3 hours. Professor Peele

Graphics } (Mechanical Engineering I)—2 hours lectures and drawing-room
Drawing } practice. Mr. Mayer and Mr. Harrington

Second Term

Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Minerals of Building Stones (Mineralogy IV)—2 hours lectures, and 1 afternoon laboratory. Dr. Luquer

Water Supply Engineering and Irrigation (Civil Engineering III)—2 hours. Mr. Foyé

Drawing (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. Mayer

Summer Vacation

Surveying (Civil Engineering XV). Mr. Foyé

COURSE IN CIVIL ENGINEERING

Third Year

First Term

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

GEOLOGY (Geology II)—3 hours. Professor KEMP

GEODESY (Astronomy III)—2 hours. Professor REES

MASONRY STRUCTURES (Civil Engineering IV)—1 hour. Mr. TUSKA

ELASTICITY AND RESISTANCE OF MATERIALS—(Civil Engineering V)—3 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

SEWAGE DISPOSAL (Civil Engineering VIII)—2 hours. Professor BURR

DESIGN, PROBLEMS (Civil Engineering IV and V)—Afternoon work. Professor BURR, Mr. FOYÉ, Mr. TUSKA, and Mr. BLACK

Second Term

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

GEOLOGY (Geology II)—3 hours. Professor KEMP

GEODESY (Astronomy III)—2 hours. Professor REES and Mr. MONELL

MASONRY STRUCTURES (Civil Engineering IV)—1 hour. Mr. TUSKA

ELASTICITY AND RESISTANCE OF MATERIALS (Civil Engineering V)—2 hours. Professor BURR

THEORY OF TRUSSES (Civil Engineering VII)—2 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering V)—2 hours, and 1 afternoon practical work. Professor CROCKER

GRAPHICAL STATICS (Civil Engineering VI)—2 hours. Mr. TUSKA

DESIGN, PROBLEMS (Civil Engineering IV, V, VI, and VII)—Afternoon work. Professor BURR, Mr. FOYÉ, Mr. TUSKA, and Mr. BLACK

Summer Vacation

PRACTICAL GEODESY (Astronomy III)—6 weeks. Professor REES and Mr. MONELL

RAILROAD SURVEYING (Civil Engineering XVI). Mr FOYÉ

COURSE IN CIVIL ENGINEERING

Fourth Year

First Term

Geodesy (Astronomy III)—2 hours. Professor Rees and Mr. Monell

Bridges, Roofs, and Buildings (Civil Engineering X)—2 hours. Professor Burr

Management of Boilers (Mechanical Engineering IX)—2 hours. Professor Hutton

Thermodynamics (Mechanics IV)—3 hours Professor Pupin

Heat and its Applications (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor Hutton and Mr. Gregory

Motors (Mechanical Engineering XI)—1 hour. Professor Hutton

Machinery and Mill Work (Mechanical Engineering XIII)—2 hours. Mr. Woolson

Foundations (Civil Engineering XI)—2 hours. Professor Burr

Hydraulics (Civil Engineering XII)—2 hours. Professor Burr

Railroad Engineering (Mechanical Engineering XV)—3 hours, first half of session. Mr. Woolson. (Civil Engineering IX)—3 hours, second half of session. Mr. Foyé

Hygiene

Design, Problems (Civil Engineering X and XI)—Afternoon work. Professor Burr, Mr. Foyé, and Mr. Tuska

Second Term

Bridges, Roofs, and Buildings (Civil Engineering X)—2 hours. Professor Burr

Management of Engines (Mechanical Engineering X)—4 hours. Professor Hutton

Heat and its Applications (Mechanical Engineering VIII)—2 hours. Professor Hutton

Dynamics of Engineering (Mechanical Engineering XII)—1 hour. Professor Hutton

Machinery and Mill Work (Mechanical Engineering XIII)—2 hours. Mr. Woolson

Foundations (Civil Engineering XI)—2 hours. Professor Burr

Sewers and Harbors (Civil Engineering XII)—2 hours. Professor Burr and Mr. Foyé

Railroad Engineering (Civil Engineering IX)—3 hours. Mr. Foyé

Hygiene

Design, Problems (Civil Engineering X and XI)—Afternoon work. Professor Burr, Mr. Foyé, and Mr. Tuska

Project, on some Civil Engineering subject approved by the head of the department

COURSE IN ELECTRICAL ENGINEERING

First Year

First Term

TRIGONOMETRY (Mathematics IV)—4 hours, first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours, second part of term. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and DR. CUSHMAN

DESCRIPTIVE GEOMETRY, DRAWING } (Mechanical Engineering I)—2 hours, and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Summer Vacation

SUMMER WORK, a set of drawings on subjects to be assigned by the Instructor in Drawing

COURSE IN ELECTRICAL ENGINEERING

Second Year

First Term

Analytical Geometry and Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physics (Physics III)—2 hours. Professor Hallock

Physical Laboratory (Physics III)—8 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Graphics } (Mechanical Engineering I)—2 hours lectures and drawing-
Drawing } room practice. Mr. Mayer

Second Term

Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physics (Physics III)—2 hours. Professor Hallock

Physical Laboratory (Physics III)—8 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Elements of Electrical Engineering (Electrical Engineering VII)—3 hours. Professor Crocker and Mr. Freedman

Drawing (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. Mayer

Summer Vacation

Memoir, on some subject to be assigned by the Professor of Electrical Engineering

COURSE IN ELECTRICAL ENGINEERING

Third Year

First Term

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ELASTICITY AND RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours and 2 afternoons. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

DYNAMO AND MOTOR PRACTICE (Electrical Engineering I)—4 hours. Professor CROCKER and Mr. SEVER

THEORY OF DYNAMO AND MOTOR (Mechanics VI)—3 hours. Professor PUPIN

ELECTRICAL MEASUREMENTS (Electrical Engineering IX)—2 hours. Mr. FREEDMAN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—2 afternoons. Mr. SEVER

DRAWING (in connection with Electrical Engineering I)—1 afternoon. Mr. WOOLSON

Second Term

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ELASTICITY AND RESISTANCE OF MATERIALS (Civil Engineering V)—2 hours, and 2 afternoons. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering VI)—2 hours. Professor CROCKER and Mr. FREEDMAN

ELECTRIC LIGHTING (Electrical Engineering IV)—3 hours. Professor CROCKER

THEORY OF DYNAMO AND MOTOR (Mechanics VII)—3 hours. Professor PUPIN

ELECTRICAL MEASUREMENTS (Electrical Engineering IX)—2 hours. Mr. FREEDMAN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—2 afternoons. Mr. SEVER

DRAWING—1 afternoon. Mr. WOOLSON

Summer Vacation

MEMOIR, on subjects to be assigned by the Professor of Electrical Engineering

COURSE IN ELECTRICAL ENGINEERING

Fourth Year

First Term

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

THERMODYNAMICS (Mechanics IV)—3 hours. Professor PUPIN

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MOTORS (Mechanical Engineering XI)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

ELECTRICAL ENGINEERING (Electrical Engineering III)—1 hour. Professor CROCKER

ELECTRIC POWER (Electrical Engineering II)—3 hours. Professor CROCKER

THEORY OF ALTERNATORS AND TRANSFORMERS (Mechanics VIII)—3 hours. Professor PUPIN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI)—3 afternoons. Mr. SEVER and Mr. FREEDMAN

HYGIENE

DRAWING, PROBLEMS AND DESIGN (in connection with Electrical Engineering II and III)

Second Term

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

ELECTRICAL ENGINEERING (Electrical Engineering III)—2 hours. Professor CROCKER

ELECTRIC RAILWAY (Electrical Engineering VIII)—2 hours. Mr. SEVER

THEORY OF VARIABLE CURRENTS (Mechanics IX)—2 hours. Professor PUPIN

ADVANCED THEORY OF ELECTRICITY (*optional*) (Mechanics XIV, XV, or XVII). Professor PUPIN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI)—3 afternoons. Mr. SEVER and Mr. FREEDMAN

HYGIENE

DRAWING, PROBLEMS AND DESIGN (in connection with Electrical Engineering II, III, and VIII)

THESIS, original investigation of some subject approved by the Professor of Electrical Engineering

COURSE IN METALLURGY

First Year

First Term

TRIGONOMETRY (Mathematics IV)—4 hours, first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours, second part of term. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory. Professor MOSES, Dr. LUQUER, and Mr. WHITLOCK

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

SURVEYING (Civil Engineering I)—2 hours. Mr. FOYÉ and Mr. BLACK

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and drawing-room practice. Mr. MAYER and Mr. HARRINGTON
DRAWING }

Summer Vacation

SURVEYING (Civil Engineering XIV). Mr. FOYÉ

COURSE IN METALLURGY

Second Year

First Term

Analytical Geometry and Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physics (III)—2 hours. Professor Hallock

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Quantitative Analysis (Chemistry XIV)—2 hours, and 15 hours laboratory. Professor Ricketts and Mr. Bowen

Mineralogy (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor Moses and Dr. Luquer

Excavation and Tunneling (Mining I)—3 hours. Professor Peele

Graphics } (Mechanical Engineering I)—2 hours lectures, and drawing-room
Drawing } practice. Mr. Mayer

Second Term

Calculus (Mathematics VIII)—4 hours. Professor Van Amringe

Physical Laboratory (Physics III)—2 hours. Professor Hallock and Mr. Cushman

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Quantitative Analysis (Chemistry XIV)—2 hours, and 15 hours laboratory. Professor Ricketts and Mr. Bowen

Optical Mineralogy (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Dr. Luquer

Lithology (Geology V)—2 hours lectures and 1 afternoon laboratory practice for 2 months. Professor Kemp

Boring and Shaft Sinking (Mining II)—2 hours. Professor Peele

Mine Surveying (Mining IX)—1 hour. Mr. Durham

Drawing (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. Mayer

Summer Vacation

Practical Mining (Mining XI) *optional*—6 weeks. Professor Peele and Mr. Durham

Surveying (Civil Engineering XIV). Mr. Foyé

COURSE IN METALLURGY

Third Year

First Term

Analytical Mechanics (Mechanics I)—3 hours. Professor Woodward

Assaying (Chemistry XXI)—4 hours, and 15 hours laboratory. Professor Ricketts and Dr. Miller

Geology (Geology II)—3 hours. Professor Kemp

Elasticity and Resistance of Materials (Civil Engineering V)—3 hours. Professor Burr

Properties of Materials (Mechanical Engineering V)—2 hours. Professor Hutton

Mining (Mining III)—4 hours. Professor Munroe

Metallurgy (Metallurgy I)—5 hours. Professor Egleston and Mr. Struthers

Design, Problems (Civil Engineering V)—Afternoon work. Professor Burr and Mr. Foyé

Second Term

Analytical Mechanics (Mechanics I)—3 hours. Professor Woodward

Quantitative Analysis (Chemistry XIV)—2 hours, and 15 hours laboratory. Professor Ricketts, Mr. Bowen, and Dr. Vulté

Geology (Geology II)—3 hours. Professor Kemp

Elasticity and Resistance of Materials (Civil Engineering V)—2 hours. Professor Burr

Properties of Materials (Mechanical Engineering VI)—2 hours, and laboratory work. Professor Hutton, Mr. Woolson, and Mr. Gregory

Electrical Engineering (Electrical Engineering V)—2 hours and 1 afternoon practical work. Professor Crocker

Ore Dressing (Mining IV)—4 hours. Professor Munroe

Metallurgy (Metallurgy II)—5 hours. Professor Egleston and Mr. Struthers

Design, Problems (Civil Engineering V, VI, and VII)—Afternoon work. Professor Burr and Mr. Foyé

Summer Vacation

Practical Mining (Mining XI)—5 weeks. Professor Peele and Mr. Durham

Geological Field Work—1 week. Professor Kemp

COURSE IN METALLURGY

Fourth Year

First Term

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

THERMODYNAMICS (Mechanics IV)—3 hours. Professor PUPIN

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MINE ENGINEERING (Mining VI)—2 hours. Professor MUNROE

MINE PLANT (Mining VII)—3 hours. Professor PEELE

METALLURGY (Metallurgy III)—5 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Project)

Second Term

ORE DRESSING (Mining V)—1 afternoon first half of term. Professor MUNROE

ORE TESTING (Chemistry XXIII)—1 afternoon last half of term. Professor RICKETTS and Dr. MILLER

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

MINE ENGINEERING (Mining VI)—2 hours. Professor MUNROE

MINE PLANT (Mining VII)—2 hours. Professor PEELE

MINE ADMINISTRATION (Mining X)—1 hour. Professor MUNROE

METALLURGY (Metallurgy III)—5 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Project)

PROJECT, on some Metallurgical subject approved by the head of the department

COURSE IN GEOLOGY AND PALÆONTOLOGY

First Year

First Term

TRIGONOMETRY (Mathematics IV)—4 hours, first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours, second part of term. Mr. MACLAY

PHYSICS (PHYSICS I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory. Professor MOSES, Dr. LUQUER, and Mr. WHITLOCK

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture, and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

SURVEYING (Civil Engineering I)—2 hours. Mr. FOYÉ and Mr. BLACK

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY.

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

UALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and DR. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and drawing-room practice. Mr. MAYER and Mr. HARRINGTON
DRAWING }

Summer Vacation

SURVEYING (Civil Engineering XIV). Mr. FOYÉ

COURSE IN GEOLOGY AND PALÆONTOLOGY

Second Year

First Term

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK and Mr. CUSHMAN

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

BOTANY (Botany IV)—2 hours laboratory. Dr. CURTIS

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

EXCAVATION AND TUNNELING (Mining I)—3 hours. Professor PEELE

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

PENCIL AND BRUSH DRAWING, FOSSILS. Mr. HOLLICK

Second Term

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK and Mr. CUSHMAN

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

BOTANY (Botany IV) 2 hours laboratory. Dr. CURTIS

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Dr. LUQUER

LITHOLOGY (Geology V)—2 hours lectures and 1 afternoon laboratory for 2 months. Professor KEMP

BORING AND SHAFT SINKING (Mining II)—2 hours. Professor PEELE

MINE SURVEYING (Mining IX)—1 hour. Mr. DURHAM

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

PENCIL AND BRUSH DRAWING, FOSSILS. Mr. HOLLICK

Summer Vacation

SURVEYING (Civil Engineering XIV). Mr. FOYÉ

COURSE IN GEOLOGY AND PALÆONTOLOGY

Third Year

First Term

ASSAYING (Chemistry XXI)—4 hours, and 15 hours laboratory practice. Professor RICKETTS and Dr. MILLER

GEOLOGY (Geology II)—3 hours. Professor KEMP

PALÆOBOTANY (Geology IX)—2 hours, and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany V)—4 hours laboratory. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I A)—1 hour. Dr. DEAN

OPTICAL MINERALOGY AND CRYSTALLOGRAPHY (Mineralogy VII and VIII)—3 hours. Professor MOSES and Dr. LUQUER

MINING (Mining III)—4 hours. Professor MUNROE

METALLURGY (Metallurgy I)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Geological maps, sections, and specimens). Mr. HOLLICK

Second Term

GEOLOGY (Geology II)—3 hours. Professor KEMP

PALÆOBOTANY (Geology IX)—2 hours, and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany V)—4 hours laboratory. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I A)—1 hour. Dr. DEAN

OPTICAL MINERALOGY AND CRYSTALLOGRAPHY (Mineralogy VII and VIII)—3 hours. Professor MOSES and Dr. LUQUER

ORE DRESSING (Mining IV)—4 hours. Professor MUNROE

METALLURGY (Metallurgy II)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Geological maps, sections, and specimens). Mr. HOLLICK.

Summer Vacation

MEMOIR, based on field work, under the personal direction of the officers of the department

COURSE IN GEOLOGY AND PALÆONTOLOGY

Fourth Year

First Term

QUANTITATIVE ANALYSIS (Chemistry XV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

PALÆONTOLOGY (Geology VII)—2 hours lectures and 4 hours laboratory. Mr. VAN INGEN

BOTANY (Botany VI)—1 hour. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I B)—1 hour. Dr. DEAN

PETROGRAPHY (Geology VI)—2 hours lectures and 4 hours laboratory. Professor KEMP

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy III)—4 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Memoir and Thesis). Mr. HOLLICK

Second Term

QUANTITATIVE ANALYSIS (Chemistry XV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS and Mr. BOWEN

ORE TESTING (Chemistry XXIII)—1 afternoon last half of term. Professor RICKETTS and Dr. MILLER

PALÆONTOLOGY (Geology VII)—2 hours lectures and 4 hours laboratory. Mr. VAN INGEN

BOTANY (Botany VI)—1 hour. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I B)—1 hour. Dr. DEAN

PETROGRAPHY (Geology VI)—2 hours lectures and 4 hours laboratory. Professor KEMP

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy III)—4 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Memoir and Thesis). Mr. HOLLICK

THESIS, on some Geological subject approved by the head of the department

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

First Year

First Term

TRIGONOMETRY (Mathematics IV)—4 hours first part of term. Mr. MACLAY

ALGEBRA (Mathematics IV)—4 hours second part of term. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

CHEMICAL PHYSICS (Chemistry III)—2 hours. Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and afternoons of alternate weeks laboratory. Professor MOSES, Dr. LUQUER, and Mr. WHITLOCK

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering 1)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Second Term

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Mr. MACLAY

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Dr. WIECHMANN

STOICHIOMETRY (Chemistry IV)—2 hours. Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and at least 8 hours laboratory. Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Summer Vacation

SUMMER WORK, a set of drawings on subjects to be assigned by the Instructor in Drawing

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Second Year

First Term

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK and Mr. CUSHMAN

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

CHEMICAL PHILOSOPHY (Chemistry V)—2 hours. Dr. WIECHMANN

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

MINERALOGY (Mineralogy III)—2 hours lectures and 3 hours laboratory. Professor MOSES and Dr. LUQUER

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

Second Term

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK and Mr. CUSHMAN

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

CHEMICAL PHILOSOPHY (Chemistry V)—2 hours. Dr. WIECHMANN

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS. Mr. BOWEN, and Dr. VULTÉ

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Dr. LUQUER

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

Summer Vacation

MEMOIR, on some subject to be assigned by the Professor of Chemistry

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Third Year

First Term

APPLIED CHEMISTRY (Chemistry XXX)—3 hours. Professor CHANDLER and Mr. PELLEW

ASSAYING (Chemistry XXI)—4 hours, and 15 hours laboratory practice. Professor RICKETTS and Dr. MILLER

GEOLOGY (Geology II)—3 hours. Professor KEMP

METALLURGY (Metallurgy I)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Mechanical Engineering II)—1 afternoon drawing-room practice. Mr. MAYER and Mr. HARRINGTON

Second Term

APPLIED CHEMISTRY (Chemistry XXX)—3 hours. Professor CHANDLER and Mr. PELLEW

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

PREPARATION OF INORGANIC COMPOUNDS (Chemistry VII)—5 afternoons and 1 conference last half of the session. Dr. VULTÉ

GEOLOGY (Geology II)—3 hours. Professor KEMP

METALLURGY (Metallurgy II)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

Summer Vacation

MEMOIR, on some subject to be assigned by the Professor of Chemistry

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Fourth Year

First Term

Applied Chemistry (Chemistry XXX)—4 hours. Professor Chandler and Mr. Pellew

Organic Chemistry (Chemistry XXV)—6 hours lectures and recitations, and 15 hours laboratory practice. Professor Colby and Mr. Bogert

Economic Geology (Geology III)—3 hours, lectures and conferences. Professor Kemp

Metallurgy (Metallurgy III)—4 hours. Professor Egleston and Mr. Struthers

Hygiene

Second Term

Applied Chemistry (Chemistry XXX)—4 hours. Professor Chandler and Mr. Pellew

Organic Chemistry (Chemistry XXV)—6 hours lectures and recitations, and 15 hours laboratory practice. Professor Colby and Mr. Bogert

Economic Geology (Geology III)—3 hours, lectures and conferences. Professor Kemp

Metallurgy (Metallurgy III)—4 hours. Professor Egleston and Mr. Struthers

Hygiene

Thesis, on some Chemical subject approved by the head of the department

COURSE IN ARCHITECTURE

First Year

First Term

Trigonometry, Analytical } (Mathematics VI)—2 hours. Dr. Blake
Analytical Geometry }

Physics (Physics I)—3 hours. Professor Rood and Mr. Gordon

Chemistry (Chemistry I)—3 hours. Professor Chandler and Dr. Wiechmann

Ancient Architectural History (Architecture I)—2 hours. Mr. Kress

History of Ancient Ornament (Architecture V)—1 hour. Professor Hamlin

Specifications (Architecture XIII)—1 hour. Mr. Warren

Projections, Shades and Shadows (Architecture X)—2 hours. Professor Sherman

Drawing, Freehand and Architectural (Architecture IX, A and C)—15 hours. Professor Ware and Mr. Harriman

Historical Drawing (Architecture IX, B)—1 hour. Mr. Kress

Surveying (Civil Engineering I) *optional*—2 hours. Mr. Foyé and Mr. Black

Second Term

Calculus (Mathematics VII)—2 hours. Dr. Blake

Physics (Physics I)—3 hours. Professor Rood and Mr. Gordon

Chemistry (Chemistry I)—3 hours. Professor Chandler and Dr. Wiechmann

Ancient Architectural History (Architecture I)—2 hours. Mr. Kress

History of Ancient Ornament (Architecture V)—1 hour. Professor Hamlin

Specifications (Architecture XIII)—1 hour. Mr. Warren

Elements of Architecture (Architecture VIII)—2 hours. Professor Sherman

Drawing, Freehand and Architectural (Architecture IX, A and C)—15 hours. Professor Ware and Mr. Harriman

Historical Drawing (Architecture IX, B)—1 hour. Mr. Kress

Summer Vacation

Surveying (Civil Engineering XIV) *optional.* Mr. Foyé

Memoir

COURSE IN ARCHITECTURE

Second Year

First Term

Appleid Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Perspective (Architecture XI)—1 hour, December and January. Professor Ware

Architectural Engineering (Architecture XIV)—2 hours. Professor Sherman

Mediæval Architectural History (Architecture II)—2 hours. Professor Ware

Archæology, French (Architecture XVI)—2 hours. Mr. Kress

History of Mediæval Ornament (Architecture VI)—1 hour. Professor Hamlin

Theory of Form (Architecture IV)—1 hour. Professor Ware

Specifications (Architecture XIII)—1 hour. Mr. Warren

Design, Problems (Architecture XV)—15 hours. Professor Ware

Drawing, Freehand (Architecture IX, C)—2 hours. Professor Ware

Second Term

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Architectural Engineering (Architecture XIV)—2 hours. Professor Sherman

Mediæval Architectural History (Architecture II)—2 hours lectures, and 12 hours research. Professor Ware

Archæology, French (Architecture XVI)—2 hours. Mr. Kress

History of Mediæval Ornament (Architecture VI)—1 hour. Professor Hamlin

Decorative Arts (Architecture IV)—1 hour. Professor Ware

Specifications (Architecture XIII)—1 hour. Mr. Warren

Historical Design (Architecture II and XV)—3 hours. Professor Ware

Drawing, Freehand (Architecture IX, B and C)—2 hours. Professor Ware

Summer Vacation

Surveying (Civil Engineering XIV) *optional.* Mr. Foyé

Memoir

COURSE IN ARCHITECTURE

Third Year

First Term

GEOLOGY (Geology IV)—2 hours. Mr. HOLLICK, with twelve introductory lectures by Professor Moses on Common Minerals (Mineralogy V)

ARCHITECTURAL ENGINEERING (Architecture XIV)—3 hours. Mr. SNELLING

MEDIÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours. Professor WARE

ARCHÆOLOGY, GERMAN (Architecture XVI)—2 hours. Mr. KRESS

HISTORY OF MEDIÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

THEORY OF FORM (Architecture IV)—1 hour. Professor WARE

SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor HAMLIN

DRAWING, FREEHAND (Architecture IX, C)—2 hours. Professor HAMLIN

Second Term

ECONOMIC GEOLOGY OF BUILDING STONES (Geology III)—3 hours for one month. Professor KEMP

ARCHITECTURAL ENGINEERING (Architecture XIV)—2 hours. Mr. SNELLING

MEDIÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours lectures, and 12 hours research. Professor WARE

ARCHÆOLOGY, GERMAN (Architecture XVI)—2 hours. Mr. KRESS

HISTORY OF MEDIÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

DECORATIVE ARTS (Architecture IV)—1 hour. Professor WARE

SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

HISTORICAL DESIGN (Architecture II and XV)—3 hours. Professor WARE

DRAWING, FREEHAND (Architecture IX, B and C)—1 hour. Professor HAMLIN

Summer Vacation

MEMOIR

COURSE IN ARCHITECTURE

Fourth Year

First Term

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XX and XXI)—6 hours lectures and 15 hours practice. Mr. SNELLING and Mr. WARREN

ADVANCED ARCHITECTURAL HISTORY (Architecture XVIII)—2 hours recitation. Professor WARE

ADVANCED ARCHITECTURAL DESIGN (Architecture XIX)—15 hours. Professor HAMLIN

SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESCRIPTIVE GEOMETRY (Architecture XII)—2 hours. Professor SHERMAN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor HAMLIN

HYGIENE

DRAWING, WATER COLORS (Architecture IX, C)—1 hour. Professor HAMLIN and Mr. HARRIMAN

Second Term

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XX and XXI)—6 hours lectures and 15 hours practice. Mr. SNELLING and Mr. WARREN

ADVANCED ARCHITECTURAL HISTORY (Architecture XVIII)—2 hours recitation. Professor WARE

ADVANCED ARCHITECTURAL DESIGN (Architecture XIX)—15 hours. Professor HAMLIN

SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor HAMLIN

STEREOTOMY (Architecture XII)—2 hours. Professor SHERMAN

HYGIENE

DRAWING, FIGURE AND ORNAMENT (Architecture IX, C)—1 hour. Professor HAMLIN

THESIS, original design or investigation and construction of some Architectural subject

By-Laws

1 At the beginning of the first year each student must elect which of the seven courses he intends to pursue, and must thenceforth abide by his election unless permitted by the Faculty to make a change.

2 No student is allowed to pursue more than one course at a time.

Admission

3 Candidates for admission to the first class, at its formation, must be of the age of *eighteen years*, complete ; and for admission to advanced standing there will be required a corresponding increase of age ; but this rule may be dispensed with when, in the opinion of the Faculty, there are sufficient reasons to justify its relaxation.

Enrolment and Certificates

4 An applicant for admission must file with the Dean of the School of Mines, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination. No student will be examined in June, 1895, whose name is not enrolled and whose certificate is not filed on or before Wednesday, June 5th, of the same year ; nor will any student be examined in September, 1895, whose name is not enrolled and whose certificate is not filed on or before Monday, September 23d. Blank forms of the certificate required can be had upon application to the Registrar of the School of Mines. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

5 Every candidate must, before admission, present a certificate of good moral character from his last teacher, or from some citizen in good standing, and students from other colleges must bring certificates from those colleges of honorable dismission.

Entrance Examinations

6 Candidates for the first class must pass satisfactory examinations in :

Mathematics :

Arithmetic, including the metric system of weights and measures.

Algebra, on the fundamental operations, greatest common divisor and least common multiple, fractions, equations of the first degree, formation of powers, extraction of roots, radicals, equations of the second degree, ratio, proportion, and series.

Geometry, plane, solid, and spherical geometry.

Plane trigonometry, on the use of tables of logarithms of numbers and of logarithms of trigonometric functions, solution of right-angled and of oblique-angled plane triangles.

Physics :

On the equivalent of Ganot's smaller treatise (Peck's Ganot's Natural Philosophy).

Chemistry :

On the non-metallic elements and their important compounds with each other, as given in the ordinary high-school text-books.

English :

Grammar, (Whitney's Essentials of English Grammar indicates the field to be covered).

Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged with reference to spelling, punctuation, grammar, division by paragraphs, and expression.

For 1895 the works prescribed are :

Shakspere's Twelfth Night, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, and Macaulay's Essays on Milton and Addison.

For 1896, the works prescribed are :

Shakspere's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton, and Webster's first Bunker Hill Oration.

French :

The elements of French grammar.

The ability to read easy French, such as Rambaud's Petite Histoire de la Civilisation Française.

The admission examination in French is divided into two parts designed to test, respectively, (1st) the ability of the applicant to read at sight French prose of ordinary difficulty, (2d) his knowledge of elementary grammar.

The ability to read ordinary French prose will be acquired, it is believed, by the reading, in addition to the study of grammar, of three hundred or more 12mo pages of French. It is recommended that the reading be divided between historical narrative and popular works on science, including the names of most of the articles in daily use ; a few very simple descriptive passages may also be included. Although no work is prescribed, the attention of teachers in preparatory schools is called to Alfred Rambaud's Petite Histoire de la Civilisation Française (Paris, A. Colin) and Louis Figuier's Les Grandes Inventions (Paris, Hachette).

By knowledge of elementary grammar is meant knowledge of the paradigms, including the four conjugations of regular verbs, as well as the most frequently used irregular verbs and those belonging to the same classes as *sentir*, *paraître*, *craindre*, etc. ; knowledge of elementary syntax, including the place of personal pronouns when used as direct or indirect objects. This knowledge may be tested as well by translation in French of very simple English sentences as by direct questioning.

The following grammatical nomenclature will be adhered to on the examination papers :—Article : definite, indefinite, and partitive. Noun : common, proper. Adjective : qualifying and determinative, the latter including demonstrative, possessive, numeral, indefinite, and interrogative. Pronoun : personal, demonstrative, possessive, indefinite, relative, and interrogative. Verbs : auxiliary, regular, irregular, and impersonal ; active and passive ; transitive and intransitive. Adverbs of quantity, time, place, and manner. Prepositions. Conjunctions. Interjections. For the moods and tenses of verbs the following will be adhered to : Indicative simple tenses—present, imperfect, future, past definite or preterite ; compound tenses—past indefinite, pluperfect, future anterior, past anterior. Subjunctive : simple tenses—present, imperfect ; compound tenses—past, pluperfect. Conditional : present, past. Imperative : present, past. Infinitive : present, past. Participle : present, past.

The preparation for the examination, if spread over two years, ought to occupy no less than three weekly recitations of one hour each ; good results might be obtained in one year with daily recitations of forty-five minutes each.

The teachers in preparatory schools will greatly help the work of the College if they will bear in mind that definite knowledge is what is required, and not merely acquaintance with the forms of the language. A firm grasp of the most important rules and most constant forms will be found much more useful than the knowledge of some curious exception. Pronunciation, although it cannot be tested at the entrance examination, which is wholly in writing, must not be neglected. Applicants ought to be able to read aloud intelligibly what they are expected to be able to translate.

The use of good English is expected on the part of the candidates on their examination books, whether in answers to direct questions or in translations from French to English.

Only candidates coming for their *full* or *final* entrance examination can present French. It cannot be presented in the *preliminary* examination.

The object of the admission requirement in French is to secure for the students in the School of Mines ability to use readily French authorities on the subjects taught in the school. Scientific works in French will have to be read wholly or in part by every student from the first year on.

German :

The elements of German grammar.

The ability to read easy German, such as Andersen's or Grimm's Märchen.

The object of the entrance examination in German is to determine whether the candidate has a sufficient knowledge of grammar, vocabulary, and idiom, to

read easy German prose at sight. Andersen's and Grimm's Märchen are suggested merely to indicate the grade of work ; any easy stories or plays can be used in preparation with equally good results.

An adequate preparation for this examination ought to extend over two years, with three recitations a week, at the ordinary pace of school work.

Instruction in grammar should be thorough with regard to the ordinary paradigms and everyday constructions ; and the ordinary connective words—auxiliaries, prepositions, conjunctions, etc.—should be learned early and thoroughly. But grammar drill should, after the first introductory lessons, follow rather than precede abundant practice in reading. Pupils should prepare lessons of suitable length from a text, and be held to strict account, not only for the vocabulary, but also for the grammatical points in the lesson. At least 100 pages should be covered in this careful way in the course of preparation. Besides this kind of work, the pupils should have daily practice in translation at sight, and should read in that way not less than 200 pages.

It is recommended that the required preparation in German as set forth above should be supplemented by the reading of Gore's German Science Reader.

History :

On the equivalent of Johnston's History of the United States.

Free-hand Drawing :

Including the ability to sketch, both in outline and with proper shading, ordinary objects, such as a house, a simple piece of machinery, a piece of flat ornament from a copy, a group of geometrical solids. Each applicant must execute the required drawings in the presence of the examining officer. No certificates of drawings made elsewhere are accepted.

7 Entrance examinations will be held at the College, and for the convenience of candidates for admission residing at a distance from New York, at other principal cities, on Wednesday, June 12, 1895, and days following, and on Monday, September 30, 1895, and the days following, and, by permission of the Faculty on suitable application, at any time during the session.

8 The applicant may present himself in a portion of the subjects, in June and complete his examinations in September of the same year. But no examination for admission will be allowed to stand to the credit of an applicant for a period longer than sixteen months.

Preliminary Examinations

9 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the appointed examination time in May or June of the year preceding his admission into the first class, but not at any other time, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination all subjects required for admission *except*

In algebra, equations of the second degree and beyond.

In geometry, solid and spherical geometry.
Trigonometry.
French.
German.
English Composition.

Diplomas and Certificates in Lieu of Examination

10 Diplomas and certificates of other colleges and schools of science will be accepted in lieu of examination, *if satisfactory to the examining officers.* Each examining officer decides the question for his special department. No certificates in lieu of examinations will be accepted, except those of degree-granting institutions, including the Regents of the University of the State of New York.

11 The Committee of the Faculty on Admissions and Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, which candidates have been admitted, which have been admitted conditionally, and which have been rejected.

12 Students deficient in minor studies may be admitted conditionally ; each case being considered on its merits by the Committee on Admissions. Students admitted conditionally at the beginning of the academic year must satisfy all conditions in the week following the Christmas vacation, unless, for reasons of weight, the time be extended by the Faculty. Students who fail to satisfy their entrance conditions within the time specified will be dropped from the roll.

13 The Committee of the Faculty on Admissions and examinations have jurisdiction over all questions arising under the rules relating to entrance examinations.

Advanced Standing

14 Candidates for advanced standing must pass a satisfactory examination upon the studies named above, and also upon those pursued by the class up to the time at which they propose to enter.

15 No candidates are admitted later in the course than the beginning of the fourth year.

Attendance

16 Prompt attendance is required upon all the exercises of the school. Each instance of tardiness will be counted as half an absence.

17 Attendance during all the hours specified on the scheme of attendance adopted by the Faculty is obligatory.

18 Any student who shall have been absent from more than ten per cent. of the exercises in any subject, shall not be entitled to examination in that subject.

19 If any student be absent from more than one-third of the lectures, recitations, or exercises in the laboratory or drawing academy in any department no excuse whatever will be accepted, and he will not be allowed to attend the regular examination in that department.

20 When a student is debarred from attending an examination on account of excessive absences, said debar shall be counted as a failure to pass the examination.

21 Any student who, being present at the school, shall absent himself from any exercise, or shall leave the grounds during the hours at which his attendance is due, shall be liable to removal from the roll of his class.

22 Students are required to attend all the exercises and pass all the examinations of the class and course to which they belong unless specially excused by vote of the Faculty.

23 By special permission of the Faculty, students may attend exercises not required in the class or course to which they belong, provided that such attendance does not interfere with the required exercises of their class and course. Such students are held to the same rules of attendance and examination in the extra studies as in the required studies of their class and course.

24 Students who obtain on examination in advance a mark of *eight* or more in any subject may be excused from attendance upon the exercises in that subject. This rule does not apply to students who repeat the studies of any year under by-law 28. Reports of such standing must be filed with the Dean of the Faculty, who alone is authorized to excuse students from attendance.

25 Any student who shall have passed a satisfactory examination in the School of Arts of Columbia College in any study forming a part of the regular course in the School of Mines, will not be required to pursue that study in the school.

Examinations

26 Examinations will be held at the end of the first term (semi-annual), or at the end of the year (annual), on all subjects taught in the school.

27 Any student found guilty of fraudulent practices at examination will be summarily dismissed from the school.

28 Any student who shall fail to pass in any of his studies at the regular semi-annual or annual examination, may present himself for a second examination at the end of the summer vacation; failing to pass in this second examination, his name will be dropped from the roll of his class, and he will not be permitted to attend any of the exercises of said class, except by special permission first obtained from the President; but he may enter the succeeding class and pursue all of its exercises and present himself with that class for examination in all subjects; upon failing a third time in any study, his name will be dropped from the roll of the school.

29 Absence from a regular semi-annual or annual examination, unless excused by the Faculty, will be counted a failure to pass that examination. This rule shall apply to examinations for delinquents held at the end of the summer vacation.

30 Special examinations will not be granted to students who fail at the regular examinations; but they may present themselves at the time of the next regular examinations.

31 Examinations at times other than here designated are not held except by order of the Faculty.

32 Deficient students of the first, second, or third years will not be allowed to attend any summer school without special permission of the Faculty.

33 No student is entitled to a degree until he has passed satisfactory examinations in all the studies of the course in which he desires to graduate.

34 When a student fails to receive his degree with his class, and returns at some later period to present himself for examination for the same, he will be required to comply with all the requirements at the later date, and the same rule shall apply to students who have received one degree and make application for another.

Standing

35 Every officer keeps a record of the scholarship of each student.

36 The maximum mark is ten in each department, and six is required to pass a student.

Special Students

37 Graduates of the School of Mines, and of other institutions of like grade and standing, may pursue any subjects taught in the school for which they are properly qualified.

38 Permission to pursue special courses is sometimes given, for reasons of weight, to persons of mature age who are not graduates, but special students are not desired in the regular professional courses.

The Laboratories and Drawing Academies

39 No student will be allowed in a laboratory or a drawing academy at a time when his attendance there is not due. During hours assigned for practical work in each of the laboratories, and in the drawing academies, the attendance of students will be required. A record of the daily attendance and of the progress of each student will be kept by the officer in charge.

40 The attendance of students of the first and second years in the drawing-room at such times as they are not engaged at lectures, between 9.30 A.M. and 1.30 P.M., is obligatory for students in Engineering and Architecture, for such hours and times as may be selected by the Professors of Engineering and Architecture.

Order

41 Good order and gentlemanly deportment are required of all students, as a condition of attendance upon the exercises of the school.

42 Smoking is prohibited in the College buildings.

Excursions and Summer Schools

During the session, the students may visit the different machine shops, electrical and metallurgical establishments of the city and its environs.

During the summer vacations, memoirs, on subjects which will be assigned, are required of students as follows: of students in the courses of electrical engineering, of analytical and applied chemistry, and of architecture, at the close of the first, second, and third years; of students in the course of geology and palæontology at the close of the third year. The time specified for the completion and handing in of the memoirs in chemistry is November 1st of each year, and for other memoirs and summer work the time specified is the second Monday in October.

During the third year students in the courses of engineering may join a volunteer class in practical mechanical engineering under the supervision of the professor of mechanical engineering.

During the latter part of the vacations following the close of the first and second years, students in the courses of mining and civil engineering, metallurgy, and geology are required to join the summer class in surveying under the direction of the instructor in civil engineering.

During the vacation following the close of the third year, students in the courses of mining engineering and metallurgy are required to visit the mines and engage in actual work or study under the superintendence of the adjunct professor of mining. This summer class is open to second-year students, *without conditions*, as an optional course.

During the latter part of the vacation following the close of the third year, students in the courses of mining and civil engineering are required to attend a class in railroad surveying for a period of three weeks. The students in the mining engineering course have the option of attending this class in the vacation following the close of the second year. The class is under the direction of the instructor in civil engineering.

During the vacation following the close of the third year, students in the course of civil engineering are required to attend a summer class in geodesy for six weeks. The class is under the supervision of the professor of astronomy.

NOTE.—To render unnecessary many inquiries addressed to the registrar, it is here stated that there are no dormitories attached to the school.

Part II

GRADUATE COURSE IN SANITARY ENGINEERING

The full course for the degree of Sanitary Engineer occupies two years. The instruction is arranged as follows :

THE GENERAL PRINCIPLES OF HYGIENE—courses of diseases, modes of determining their presence and of preventing and destroying them ; bacteriology ; organization and duties of health authorites ; sanitary jurisprudence.

ORGANIC CHEMISTRY—general principles and methods of analysis.

WATER SUPPLY—rainfall, flow of streams, storage of water, quantity required for cities and town, asylums and hospitals ; impurities of water, their origin and nature, whether occurring at its source, in storage, or in distribution, and methods of purification, by screens, filter-beds, infiltration galleries, and chemical processes ; analysis, microscopical and chemical.

AIR—composition, its impurities, effect of these on the sanitary condition of cities and towns, hospitals, asylums, public and private dwellings.

SOIL—methods of studying the topographical and geological features of a district in reference to the effect of the quality and characteristics of the soil upon the drainage and other sanitary conditions, the locations of cemeteries.

HOUSE DRAINAGE—water supply and drainage of public buildings and private dwellings, connected with the removal of laundry, sink, and closet refuse ; practical elements of plumbing.

SEWAGE—removal and disposal by various methods, including the frequent and systematic removal from cesspools and privies, accompanied by disinfection and deodorization, by the water-carriage system and pneumatic system, to points of its final disposition ; the construction of sewers, including combined and separate systems, outfalls, sea outfalls, tank sewers, ventilation of sewers, final disposition of sewage, garbage, and other refuse by cremation furnaces, irrigation, filtration, chemical precipitation ; the construction of plants and machinery for the same.

VENTILATION—quantity of air required under various conditions, methods of supplying or renewing air by natural or spontaneous means, by artificial means, including chimneys heated at the base by stoves, or steam coils, and removed by fans or blowers ; the determination of proper methods of introducing fresh air, its proper distribution, dimensions of the air conduits, and final rejection.

HEATING—the various means of heating by stoves, hot-air furnaces, hot water, and steam, and the most practical and efficient treatment of problems arising under various circumstances connected with public and private buildings ; the construction of the apparatus and the distribution of heat, whether in connection with or independent of the ventilation.

DRAINAGE—the drainage of rural districts for sanitary objects, the surface and subsoil drainage of cities and towns, drainage of sites for country dwellings, barns, and out-houses.

Village Sanitation—the construction, care, and management of cesspools and privies, and their disposition with regard to wells and dwellings; care of streets, gardens, and yards, with reference to the accumulation and removal of refuse, surface and subsoil drainage.

Pollution of Streams—remedies to be adopted, and means of prevention.

Arrangements for Preventing and Ameliorating the Unhealthy Conditions Arising in Certain Trades and Manufactories.

Streets and Pavements, as affecting the health of communities.

The Principles of Heat and Thermo-Dynamics, applicable to all constructions connected with heating and ventilation, including boilers, radiators, and flow of air through conductors.

Inspection—methods of examination of the sanitary conditions of public and private buildings, towns and villages, and of sewers, drains, and water-courses; methods of disposal of sewage, and garbage; official inspections by members of boards of health; organizations of health commissions.

Candidates for the degree of sanitary engineer will be required to hand to the professor of civil engineering, at the end of the course, a thesis approved by the Faculty, on some subject connected with sanitary engineering, and will also be required to pass satisfactory examinations in the subjects taught.

Graduates of the School of Mines and of other institutions are admitted to the post-graduate course in sanitary engineering without examination, provided they have completed the studies which qualify them to pursue the course with advantage.

Persons who are not graduates may be admitted to the course in sanitary engineering, provided they pass the required examinations.

College diplomas and certificates will be accepted in lieu of examination for the subjects which they cover, *if satisfactory to the examining officers.*

Candidates for admission must pass satisfactory examinations in:

Mathematics:

Arithmetic, including the metric system of weights and measures; Algebra, the equivalent of Peck's Manual of Algebra; Geometry, Trigonometry, and Mensuration, the equivalent of Davies' Legendre; Analytical Geometry, the equivalent of Wentworth's Analytical Geometry; Differential and Integral Calculus, the equivalent of Osborne's.

Mechanics:

The equivalent of Parts I, II, III, and V of Rankine's Applied Mechanics.

Thermodynamics:

The equivalent of Pupin's Thermodynamics of Reversible Cycles.

Physics:

The equivalent of Atkinson's Ganot's Physics, which includes magnetism.

Chemistry:

The equivalent of the inorganic portion of Fownes' Manual of Chemistry. Also the chemistry of air; water; artificial illumination; photography; limes, mortars, and cements; building stones: decay and preservation; timber and its preservation; pigments, paints, essential oils, varnishes; glass and ceramics; explosives: gun-powder, gun-cotton, and nitro-glycerine.

Biology :

Parker's Elementary Biology, or its equivalent.

Botany :

The equivalent of Bastin's College Botany.

Geology :

Lithological, cosmical, physiographic ; historical, including palæontology, (equivalent to Dana's Manual).

Surveying :

Use of level, transit, and plane-table, and methods of making topographical surveys.

Engineering:

General principles relating to materials and structures, physically and mechanically considered. Materials : stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses. Structures : earthwork, execution of earthwork, foundation and supports ; superstructure, joints ; strength and stiffness of parts ; special rules of construction for masonry of public buildings, retaining walls and arches.

Hygiene and Sanitary Science :

The causes of disease, methods of investigation and prevention ; vital statistics ; first aid to the injured ; blood, circulation ; muscles ; exercise ; nervous system ; bacteria ; contagious diseases ; digestion ; respiration ; ventilation ; water supply ; disposal of refuse ; drainage.

Microscopy and Microbiology :

Practical acquaintance with the handling of the microscope and microscopical mounting. Biological examination of a potable water, and of bacteria from one colony.

Graphics :

The equivalent of Church's Descriptive Geometry.

Drawing :

Consisting of free-hand sketching, lettering, instrumental and projection drawing, topographical drawing.

Part III

ELECTIVE COURSES OPEN TO SENIORS AND SPECIALS IN THE SCHOOL OF ARTS

Members of the senior class and specials in the School of Arts are admitted to all the studies of the first year in the School of Mines and to the following studies of the second year :

Applied Chemistry (Chemistry XXIX)—3 hours. Professor Chandler

Mediæval Architectural History (Architecture II)—2 hours. Professor Ware

Theory of Form (Architecture IV)—1 hour, first term. Professor Ware

The Decorative Arts (Architecture IV)—1 hour, second term. Professor Ware

UNIVERSITY COURSES FOR THE DEGREES OF MASTER OF ARTS AND DOCTOR OF PHILOSOPHY, AND SPECIAL COURSES

For these courses see statements of Departments of Instruction as follows :

Architecture, page 31
Chemistry, page 41
Civil Engineering, page 52
Electrical Engineering, page 55
Mechanical Engineering, page 58
Mining, page 89

APPARATUS SUPPLIES

1 Students may purchase apparatus of any of the dealers in the city.

2 To avoid inconvenience and expense to the students, and to secure a proper selection, the school undertakes, at considerable trouble and expense, to lend apparatus on the following conditions :

(*a*) Each student engaged in laboratory work must make a deposit of forty dollars ($40) with the registrar, which deposit will be credited to him on the ledger. In case of excessive draughts of apparatus an additional deposit may be required.

(*b*) Each student shall be entitled, on presenting his receipt at the apparatus room, to draw the regular set of apparatus for qualitative, quantitative, or organic analysis, for assaying, for microscopy, or for bacteriology, according to his deposit, and from time to time to obtain ordinary articles which he may need, and these will be charged to him. At the end of the year he will be credited with those articles which he returns in good order, and the value of those which he has injured or broken will be deducted from his deposit.

(*c*) The apparatus room will be open for issuing apparatus every day at convenient hours.

(*d*) No charge is made for ordinary chemicals.

REGISTER OF STUDENTS

ABBREVIATIONS

(A).....Course in Architecture
(C).....Course in Analytical and Applied Chemistry
(C E).....Course in Civil Engineering
(E E).....Course in Electrical Engineering
(G).....Course in Geology and Palæontology
(M).....Course in Metallurgy
(M E).....Course in Mining Engineering

I—UNDERGRADUATE COURSES

FOURTH CLASS

NAME	RESIDENCE	CITY ADDRESS
Abram Horace Albertson (A)	*Bangor, Pa.*, 119 Crescent ave., Plainfield, N. J.	
Joseph Albert Alexander (C E)	*New York City*	67 West 95th st.
Augustus Nichols Allen, A.B. (A)	*New York City*	111 West 47th st.
William Claflin Andrews (E E)	*Brooklyn, N. Y.*	(162 Hicks st.)
George Frost Archer (E E)	*Garden City, L. I.*	31 Burling Slip.
David Henry Baldwin (C E)	*New York City*	144 West 122d st.
Philip Ashton Barber (C E)	*Elizabeth, N. J.*	(1045 East Jersey st.)
Frederick Phinney Bayles (M E)	*Orange, N. J.*	(408 Main st.)
Victor Mayor Benedikt, B.S. (E E)	*New York City*	123 East 83d st.
Joseph Bijur, A.B. (E E)	*New York City*	41 West 53d st.
Joshua Binion, B.S. (C E)	*New York City*	215 East Broadway
Samuel Joseph Bloomingdale (A)	*New York City*	21 East 63d st.
Harold Winthrop Buck, Ph.B. (E E)	*New York City*	14 East 45th st.
Henry Dick Bultman (A)	*Brooklyn, N. Y.*	(144 Hewes st.)
Benjamin Palmer Carter (M E)	*New Orleans, La.*	711 Lexington ave.
Edward Vermilye Cox, Ph.B. (E E)	*Philadelphia, Pa.*	50 East 31st st.
Edward Coykendall (C E)	*Rondout, N. Y.*	"The Gerard," 44th st. between Broadway and Sixth ave.
Max Dobbins (M E)	*Rahway, N. J.*	
Charles Dräsel (M E)	*Jersey City, N. J.*	(230 Webster ave.)
Henry Welles Durham (C E)	*New York City*	101 West 78th st.
Ira Nash Evans (C E)	*Brooklyn, N. Y.*	(755 Quincy st.)
Ernest August von Fintel, Jr., B.S. (C E)	*New York City*	1792 Washington ave.

NAME	RESIDENCE	CITY ADDRESS
George Wesley Fletcher (E E)	*Brooklyn, N. Y.*	(38 Grove st.)
David Foerster (M)	*New York City*	711 Lexington ave.
Mortimer Joseph Fox (A)	*New York City*	127 East 79th st.
Henry Leslie Fridenberg, Mech. Eng. (E E)	*New York City*	60 East 61st st.
Charles Gartensteig, B.S. (C E)	*New York City*	215 East 71st st.
Benjamin Britton Gottsberger (M E)	*Irvington, N. Y.*	
Frank Joseph Morgan Grace (C E)	*Great Neck, L. I.*	52 East 79th st.
Howard Stevens Hadden (A)	*Brooklyn, N. Y.*	(69 Remsen st.)
Charles Simon Herzig (M E)	*New York City*	48 West 91st st.
Clarence Frost Horton (C E)	*Cortland, N. Y.*	71 East 87th st.
Louis Doremus Huntoon, Ph.G. (M E)	*Paterson, N. J.*	(95 Bridge st.)
Elisha Harris Janes (A)	*New York City*	57 West 95th st.
Zadok Harry Jarman (M E)	*Brooklyn, N. Y.*	(112 Lefferts pl.)
Frederick Hedley Jobbins (C)	*New York City*	1674 Broadway
William Bard Johnstone (C E)	*New Brighton, S. I.*	(47 Central ave.)
Gustavus Town Kirby (E E)	*New York City*	158 West 45th st.
Henry Kraemer, Ph.G. (C)	*New York City*	18 West 60th st.
Richard Leopold Leo (A)	*New York City*	181 West 75th st.
Charles Harris Lum (A)	*Chatham, N. J.*	256 Cumberland st., Brooklyn, N. Y.
Charles Alexander Macy, 2d (M E)	*New York City*	208 West 45th st.
Samuel Osgood Miller (C E)	*West Nyack, N. Y.*	
Edgar Joachim Moeller (A)	*New York City*	3 Riverview terrace
Leon Solomon Moisseieff (C E)	*New York City*	121 Forsyth st.
Percival Robert Moses (E E)	*New York City*	46 West 97th st.
Harry Burritt Mulliken (A)	*New York City*	525 Park ave.
Isaac Natkins, B.S. (E E)	*New York City*	418 West 40th st.
Alexander Farnum Ormsbee (E E)	*Brooklyn, N. Y.*	(183 Joralemon st.)
Francis Livingston Pell (A)	*New York City*	13 East 29th st.
Howell Corbey Perrin (A)	*Larchmont, N. Y.*	
Charles Paul Peugnet (C E)	*New York City*	231 West 45th st.
Lewis Frederick Pilcher (A)	*Brooklyn, N. Y.*	(145 Gates ave.)
Herbert Pinkham (C E)	*New York City*	176 West 81st st.
Frederick Condit Reeve (E E)	*Newark, N. J.*	(88 Front st.)
Charles Lawrence Riker (C)	*New York City*	19 West 57th st.
Richard Montgomery Schell (A)	*New York City*	2040 Seventh ave.
Lucien Rowland Shattuck, B.S. (C E)	*Brooklyn, N. Y.*	(238 President st.)
Charles Douglas Shrady (C E)	*New York City*	8 East 66th st.
Morril Boughton Spaulding (M E)	*New York City*	218 West 44th st.
John Henry Stewart (C E)	*New York City*	123 West 11th st.
Frank Sutton (E E)	*New York City*	54 West 71st st.
Edwin Howard Thomes, Ph.B. (C E)	*Rowayton, Conn.*	
Austin King Tiernan, C.E. (M E)	*Salt Lake City, Utah*	148 West 49th st.
Samuel Auchmuty Tucker (C)	*New York City*	80 Washington sq., East
Frederick Warwick Walker (C E)	*Jersey City, N. J.*	(339 Webster ave.)
Lowe Whiting (M E)	*St. Paul, Minn.*	63 West 48th st.

Fourth Class..... 67

THIRD CLASS

NAME	RESIDENCE	CITY ADDRESS
Frederick Auryansen (C E)	*Piermont, N. Y.*	
Solomon D. Benoliel, B.S. (E E)	*New York City*	120 West 35th st.
Reed Raymond Bishop (E E)	*New York City*	345 West 48th st.
Francis Hill Bowman, A.B. (E E)	*New York City*	148 East 27th st.
Percy Morris Burrill (M E)	*Bartow-on-Sound, N. Y.*	56 East 49th st.
Duncan Willson Candler (A)	*Brooklyn, N. Y.*	(11 Monroe pl.)
Edward Joseph Carney (C E)	*New York City*	67 West 68th st.
Gale Hogeboom Carter (M E)	*New York City*	130 East 24th st.
Allan Jay Clark (M E)	*New York City*	873 Madison ave.
Frederick Lacy Comstock, C.E. (A)	*Ballston Spa, N. Y.*	152 West 23d st.
James Musgrave Aertsen Darrach (A)	*Morristown, N. J.*	
Charles Derleth, Jr., B.S. (C E)	*New York City*	674 East 135th st.
Horace Dowie, A.B. (E E)	*Brooklyn, N. Y.*	(363 Jefferson ave.)
Louis Victor Emanuel (M E)	*New York City*	36 West 91st st.
Henry Vernon Foster (C E)	*Westerly, R. I.*	137 West 47th st.
Lindley Murray Franklin, Jr. (A)	*Flushing, L. I.*	
Goldwin Goldsmith (A)	*New Rochelle, N. Y.*	417 Madison ave.
Louis Gottschall (A)	*New York City*	207 East 53d st.
Herbert Durand Hawks (E E)	*New York City*	40 West 55th st.
Edwin Chapin Holden, B.S. (M E)	*New York City*	17 West 132d st.
Charles Edward Hyatt (E E)	*Newark, N. J.*	(793 High st.)
Henry St. John Hyde (C)	*New York City*	210 East 18th st.
Jacob Jacobs (C E)	*New York City*	54 East 7th st.
James Ellwood Jones (M E)	*Bramwell, W. Va.*	9 West 45th st.
James Mason Knox (E E)	*New York City*	32 West 129th st.
George Herbert Lesley (C E)	*Spuyten Duyvil, New York City*	
Wilkes McClave (E E)	*Greenwich, Conn.*	136 West 58th st.
William Lytle McConway (M E)	*Pittsburgh, Pa.*	153 West 70th st.
William Bradford McKinlay (M E)	*New York City*	108 West 79th st.
Paul MacGahan (E E)	*New York City*	75 East 61st st.
Donald MacGregor (A)	*New York City*	1118 Madison ave.
Arthur Metzger (C)	*New York City*	43 East 72d st.
Ambrose Monell, Jr. (E E)	*New York City*	43 Lafayette pl.
George Tremaine Morse (A)	*Brooklyn, N. Y.*	(613 Carlton ave.)
Edward Necarsulmer (A)	*New York City*	109 East 70th st.
Charles Of (M E)	*New York City*	892 Prospect ave.
Robert Kitching Painter (M E)	*New Brunswick, N. J.*	40 East 58th st.
Joel Pemoff (C E)	*New York City*	244 East Broadway
Charles Langdon Perry (E E)	*Short Hills, N. J.*	
Herman Alfred Prosser (M E)	*Brooklyn, N. Y.*	(406 Stuyvesant ave.)
Arthur Emil Riedel (M E)	*New York City*	146 Delancey st.
Charles Rodenburg (C E)	*New York City*	428 West 44th st.
David Serber (C E)	*New York City*	98 Suffolk st.
Elliot Mathews Sergeant (E E)	*Summit, N. J.*	

NAME	RESIDENCE	CITY ADDRESS
John Seward (M E)	*Orange, N. J.*	185 Lexington ave.
Edward Isaac Shire (A)	*New York City*	109 East 61st st.
Walter Irvine Slichter (E E)	*New York City*	127 West 58th st.
Herbert James Smith (E E)	*New York City*	152 West 77th st.
Henry Stern (A)	*New York City*	1437 Lexington ave.
Edward Barney Sturgis (M E)	*New York City*	307 East 17th st.
William Gabriel Tachau (A)	*Louisville, Ky.*	109 West 85th st.
William Stevens Thyng (M E)	*Deerfield, Mass.*	12 East 42d st.
Max Bernard Toch (A)	*Roselle, N. J.*	
Edward De Voe Tompkins (C E)	*New York City*	632 West End ave.
Samuel George Fitzhugh Townsend, A.B. (E E)	*New York City*	131 Fifth ave.
Josiah Thomas Tubby, Jr. (A)	*Brooklyn, N. Y.*	(67 Willow st.)
William Cullen Uhlig (C)	*New York City*	229 East 12th st.
Boyd Van Benthuysen (A)	*Albany, N. Y.*	28 East 47th st.
Arthur Pine Van Gelder (C)	*Catskill, N. Y.*	1025 Lexington ave.
William Watson, Mech. Eng. (M E)	*Cleveland, Ohio*	60 East 49th st.
Charles Shepard Witherell (M)	*Greenwich, Conn.*	195 Madison ave.
Roberto Yrizar, A.B. (M E)	*New York City*	329 Lexington ave.

Third Class.....62

SECOND CLASS

George Christian Anthon (E E)	*New York City*	13 West 35th st.
Henry Howell Armstead, Jr. (M E)	*New York City*	"The Sherwood," 57th st. and Sixth ave.
Franklin Lawrence Babcock (E E)	*Riverdale-on-Hudson, N. Y.*	
Walter Clymer Barnes (E E)	*Paterson, N. J.*	(339 Broadway)
Putnam Asbury Bates (E E)	*New York City*	113 West 72d st.
Ahrend Harry Bavendam, Jr. (E E)	*Brooklyn, N. Y.*	(340 Greene ave.)
David Elder Baxter (C E)	*New York City*	32 West 60th st.
Wyllys Pomeroy Baxter (E E)	*New York City*	109 East 17th st.
John Jacob Bellman (E E)	*New York City*	90 King st.
Harrison Kerr Bird (E E)	*New York City*	33 East 72d st.
George Abraham Boehm (A)	*New York City*	59 West 89th st.
Emil Christian Boerner, Jr. (E E)	*Portchester, N. Y.*	
William Arthur Bostwick (M)	*New York City*	324 West 46th st.
Alexander Morrison Brown (M E)	*New York City*	245 West 54th st.
Harris Sutton Burroughs (E E)	*Brooklyn, N. Y.*	(1390 Dean st.)
Henri George Francis James Chatain (E E)	*New York City*	47 West 71st st.
Charles Martin Clark (E E)	*New York City*	831 Madison ave.
Josiah Huntoon Clark (M E)	*Paterson, N. J.*	(238 Broadway)
Herbert Wheaton Congdon (A)	*West New Brighton, N. Y.*	18 Broadway
Stewart Hooker Crampton (E E)	*Brooklyn, N. Y.*	(95 Gates ave.)
Guy Whitmore Culgin (C E)	*New York City*	118 East 61st st.
William Stewart Davidson (M E)	*Sherbrooke, Quebec, Canada*	(131 Kent st., Brooklyn, N. Y.)

NAME	RESIDENCE	CITY ADDRESS
Theakston de Coppet (A)	*New York City*	22 West 17th st.
Frank Vreeland Dobbins (M E)	*Rahway, N. J.*	
Alexander Simpson Farmer (C E)	*Brooklyn, N. Y.*	(139 South 4th st.)
Joseph Lea Fearing (E E)	*New York City*	7 East 43d st.
Benjamin Lincoln Foote (M E)	*Tarrytown, N. Y.*	
Dexter Newell Force, Jr. (E E)	*Montclair, N. J.*	26 West 47th st.
John Henry Fulle (E E)	*New York City*	1626 Madison ave.
Charles Herman Fulton (M E)	*Brooklyn, N. Y.*	(229 Fifth ave.)
Albert Rolaz Gallatin, A.B. (E E)	*New York City*	58 West 55th st.
Abner Winthrop Gill, A.B. (C E)	*Northampton, Mass.*	2164 Fifth ave.
Richard David Godley, Jr. (E E)	*Whitestone, L. I.*	
John Wesley Goodridge (C E)	*Brooklyn, N. Y.*	(981 Greene ave.)
August Henry Gotthelf (C)	*Hastings-on-Hudson, N. Y.*	
Henry Herz (A)	*Jersey City, N. J.*	(142 Mercer st.)
Charles Valentine Hesselbach, A.B. (C E)	*New York City*	93 Lexington ave.
George Gustav Heye (E E)	*New York City*	11 East 48th st.
Leo Walter Hildburgh (E E)	*New York City*	42 East 68th st.
Frederick Montgomery Holbrook (E E)	*Brooklyn, N. Y.*	(662 Jefferson ave.)
Lemuel Valentine Holder (E E)	*New York City*	161 West 76th st.
Richard Willis How, Jr. (C E)	*Wantagh, L. I.*	
James Barnes Humphreys (E E)	*New York City*	23 East 47th st.
Morris Joseph (E E)	*New York City*	212 East 58th st.
Hanford Chase Judson (E E)	*Dobbs' Ferry, N. Y.*	
William George Kilian (A)	*New York City*	352 West 33d st.
J. Day Knap (C E)	*New York City*	256 West 73d st.
Richard Koch (E E)	*New York City*	22 John st.
Russell Lane (C)	*Orange, N. J.*	(26 Clarendon pl.)
Max Loewenthal (E E)	*New York City*	248 East 78th st.
Joseph Lowenstein (C)	*Newark, N. J.*	(205 Belmont ave.)
Richard Stanislaus McCaffery (M E)	*New York City*	316 East 124th st.
John Malcolm McLean (E E)	*New York City*	204 West 36th st.
John Campbell Maben, Jr. (M E)	*New York City*	Hotel Marlborough, 36th st. and Broadway
Henry Bennett Machen (C E)	*New York City*	150 West 82d st.
Charles William MacMullen (E E)	*New York City*	521 West 161st st.
John Henry Madden (C E)	*New York City*	308 West 30th st.
Hugh Sisson Magruder, A. B. (A)	*Baltimore, Md.*	130 West 45th st.
Oscar Raymond Maicas (C E)	*New York City*	154 West 88th st.
Leo Raphael Manheims (E E)	*New York City*	319 East 87th st.
Lucius Trowbridge Martin (E E)	*New York City*	114 East 36th st.
Frederik Lewis Miller Masury (C)	*Riverdale, N. Y.*	
Henry Bedinger Mitchell (E E)	*Flushing, L. I.*	74 Leonard st.
Hardman Philips Alan Montgomery (A)	*New York City*	1189 Madison ave.
Ignatius O'Reardon (C E)	*New York City*	229 East 18th st.
Frank Fletcher Palmer (C E)	*New York City*	922 Fifth ave.
George Quintard Palmer (C E)	*New York City*	922 Fifth ave.

NAME	RESIDENCE	CITY ADDRESS
Alan Patterson (C E)	*New Canaan, Conn.*	27 West 26th st.
Thomas Bloodgood Peck, Jr. (E E)	*New York City*	111 East 34th st.
Rudolph Henry Peppmuller (A)	*New York City*	218 East 69th st.
Seymour Perkins (C E)	*New York City*	42 West 46th st.
Herman Philip Ralph (C E)	*New York City*	2305 Monroe ave.
Joseph Rapaport (E E)	*Brooklyn, N. Y.*	(109 Decatur st.)
George Washington Rappold (A)	*Brooklyn, N. Y.*	(750 Flushing ave.)
William Oakley Raymond (A)	*New York City*	31 West 82d st.
George Washington Regan (E E)	*Brooklyn, N. Y.*	(352 Degraw st.)
Emil Justus Riederer (C)	*New York City*	145 West 94th st.
Charles Edward Rogers (C E)	*New York City*	6 West 125th st.
William Ropes (C E)	*Brooklyn, N. Y.*	74 Wall st.
Victor Alfonso Ros, A.B. (E E)	*Cienfuegos, Cuba*	39 West 26th st.
Auguste Jacques Rossi, Jr. (M E)	*Perth Amboy, N. J.*	
William Newton Ryerson (E E)	*Montclair, N. J.*	
John Huntting Sayres (C E)	*Brooklyn, N. Y.*	(456 Classon ave.)
Walter William Schlect (C E)	*New York City*	446 East 57th st.
Davison Heermance Smith (E E)	*New York City*	22 East 42d st.
Oscar Bloodgood Smith, Jr. (A)	*Morristown, N. J.*	(61 Franklin st.)
Isaac Stander (C E)	*New York City*	64 Avenue D
Lyman Barney Sturgis (E E)	*New York City*	307 East 17th st.
John Edward Stow Sutton (E E)	*New York City*	Hotel Majestic, 72d st. West
Alfred Samuel Guido Taylor (A)	*New York City*	205 West 57th st.
Rowland Gilbert Tibbals (C E)	*Brooklyn, N. Y.*	(148 Milton st.)
Christopher Van Deventer (E E)	*Knoxville, Tenn.*	586 Lexington ave.
Joseph Van Vleck, Jr. (A)	*Montclair, N. J.*	28 East 47th st.
Raymond Duy Weeks (A)	*New York City*	224 West 135th st.
Lazarus White (C E)	*New York City*	14 East 120th st.
George Albert Wright (C E)	*Peekskill, N. Y.*	

Second Class.....96

FIRST CLASS

James Dhu Andrew, Jr. (E E)	*Brooklyn, N. Y.*	20 Exchange pl.
Wilbur David Andrews (A)	*New York City*	West 176th st. and Fort Washington ave.
Alfred Anthony (E E)	*New York City*	134 West 75th st.
Morton Arendt (E E)	*New York City*	42 West 126th st.
Edward Maitland Armstrong (A)	*New York City*	58 West 10th st.
Lloyd Baker (C E)	*New York City*	314 West 88th st.
Thomas Arthur Ball (A)	*New York City*	48 West 72d st.
Henry Ludlow Beadel (A)	*New Brighton, S. I.*	(Franklin ave.)
Alfred Chester Beatty (M E)	*New York City*	3 East 9th st.
William Allen Belden (E E)	*New York City*	61 West 73d st.
Julian Arnold Benjamin (M E)	*Garrison, N. Y.*	
George Lewis Bennett (C E)	*Brooklyn, N. Y.*	(210 Putnam ave)

NAME	RESIDENCE	CITY ADDRESS
Wray Annin Bentley (M)	*Brooklyn, N. Y.*	(1228 Fulton ave.)
Ralph Westervelt Best (M E)	*New York City*	15 West 121st st.
George Edgar Bissell, Jr. (E E)	*Morris Park, L. I.*	
Edward Blum (A)	*New York City*	1005 Madison ave.
Frederick Oswaldo Boyd (C E)	*Panama, S. A.*	8 West 71st st.
John Dalzell Boyd (A)	*New York City*	151 West 74th st.
Victor Buchanan Buck, Jr. (M)	*Kansas City, Mo.*	66 East 58th st.
William Gibson Burns (E E)	*Brooklyn, N. Y.*	(481 Putnam ave.)
Charles Howard Burnside (A)	*Oskaloosa, Iowa*	447 Lexington ave.
Edward Moen Cary (E E)	*New York City*	14 West 77th st.
Kenneth Lincoln Caswell (A)	*New York City*	103 East 40th st.
Louis Floro Chibas (M E)	*Tarrytown, N. Y.*	846 Lexington ave.
Frederic Edwin Church (A)	*Brooklyn, N. Y.*	(124 Milton st.)
John Thompson Conover (E E)	*New York City*	324 West 19th st.
Edwin Howell Daly (E E)	*New York City*	2050 Madison ave.
Douglas Zabriskie Doty (M E)	*New York City*	272 West 89th st.
Arthur Diamond Dunn (E E)	*New York City*	164 East 111th st.
Charles Hammond Eckerson (M E)	*Closter, N. J.*	
Allen Fulton Edwards (M E)	*New York City*	52 East 56th st.
James Jacob Ehrenreich (E E)	*New York City*	48 East 74th st.
George Gilbert Entz (A)	*New York City*	24 East 83d st.
William Henry Fearing, Jr. (C E)	*New York City*	7 East 43d st.
Herbert Roy Fenner (M E)	*Paterson, N. J.*	80 Leonard st.
Garwood Ferguson (C E)	*Paterson, N. J.*	(371 Fifteenth ave.)
Emerson Foote, Jr. (E E)	*New York City*	30 West 11th st.
Richard Geppert (C E)	*Newark, N. J.*	(20 Mercer st.)
Edwin Sidney Goldstein (A)	*Cincinnati, Ohio*	108 E. 52d st.
Robert Dun Graham (A)	*New York City*	13 West 17th st.
William King Gregory (E E)	*New York City*	179 West 10th st.
Alfred Herman Gumaer (A)	*Jersey City, N. J.*	(292 Pavonia ave.)
George Bain Gunn (C E)	*East Orange, N. J.*	(139 Munn ave.)
Emil Gunsel (A)	*New York City*	2 Fourth ave.
Charles Sidney Haight (A)	*New York City*	10 West 18th st.
Harold Newman Hall (A)	*Brooklyn, N. Y.*	(204 Hancock st.)
Albert Hansen (C)	*New York City*	346 West 57th st.
Gouverneur Morris Haskell (E E)	*Bloomfield, N. J.*	290 Washington st.
Charles Fanning Hastings (C E)	*New York City*	15 West 50th st.
Leo Hauser (A)	*New York City*	119 East 54th st.
Rowland Francis Hill, Jr. (M E)	*New York City*	31 East 75th st.
Eugene Helms Hodgson (C)	*Brooklyn, N. Y.*	(848 President st.)
Frederick Trowbridge Howard (A)	*Brooklyn, N. Y.*	(226 Lincoln pl.)
Harry Landon Howard (M E)	*New Rochelle, N. Y.*	132 Front st.
Charles Armstrong Hutchinson (C E)	*New York City*	47 West 49th st.
Jesse Leavenworth Ingersoll (M E)	*Tacoma, Washington*	23 West 50th st.
Howard Blauvelt Jackson (E E)	*New York City*	120 West 79th st.
John Alexander Johnston (E E)	*New York City*	79 West 86th st.

NAME	RESIDENCE	CITY ADDRESS
William Phelps Jones (E E)	*New York City*	312 West 28th st.
Theodore Harold Joseph (E E)	*New York City*	32 East 74th st.
Edwin Kaufman (A)	*New York City*	49 East 66th st.
Burdett Kipp (C E)	*New York City*	20 West 121st st.
Henry Krumb (M E)	*Brooklyn, N. Y.*	(55 Ten Eyck st.)
John Elias Kumpf (A)	*New York City*	308 East 35th st.
Joseph Albert Augustin Le Prince (C E)	*New York City*	170th st. and Amsterdam ave.
Edmund Julius Levine (C)	*New York City*	23 East 72d st.
Clarence McKenzie Lewis (C E)	*New York City*	104 East 37th st.
Howard Lichtenstein (E E)	*New York City*	14 West 74th st.
William Wilson Lighthipe (E E)	*Woodbridge, N. J.*	
Horace Rutheford Livengood (C)	*Elizabeth, N. J.*	(1164 E. Jersey st.)
Johnston Livingston, Jr. (E E)	*Islip, N. Y.*	1507 Broadway.
Gustavo Lobo (E E)	*New York City*	219 West 44th st.
Orleans Longacre, Jr. (M E)	*New York City*	Spuyten Duyvil
Howard Carlisle Loudon (E E)	*Brooklyn, N. Y.*	(161 Keap st.)
Christopher Meyer Lowther (E E)	*Riverside, Conn.*	
George Latimore Lucas (C E)	*New York City*	Kingsbridge
Irving Smith Lydecker (M E)	*New York City*	562 East 155th st.
James Bruce McClelland (A)	*New York City*	4 West 47th st.
William James McClure (E E)	*New York City*	259 West 52d st.
William Noble McCreery (E E)	*Flushing, L. I.*	
Milton Howard McGuire (A)	*New York City*	810 West End ave.
Hugh McLellan (A)	*New York City*	108 East 18th st.
Charles Hudson Machen (E E)	*New York City*	150 West 82d st.
Richard Tylden Mackay (E E)	*New York City*	130 East 36th st.
Sanford Mead (A)	*Greenwich, Conn.*	
Archibald LeRoy Miller (C E)	*Brooklyn, N. Y.*	(113 Henry st.)
Alexander McPherson Mitchell (C E)	*New York City*	239 West 105th st.
Munson Morris (E E)	*New York City*	14 East 63d st.
Henry Coit Mortimer, Jr. (E E)	*New York City*	54 West 21st st.
Charles Auguste Neuman (C E)	*New York City*	76 East 91st st.
Charles Howard Newman (C E)	*Brooklyn, N. Y.*	(21 Seventh ave.)
Mortimer Lewis Newman (E E)	*New York City*	107 East 90th st.
James William O'Connor (A)	*New York City*	8 East 12th st.
William Aloysius O'Connor (A)	*New York City*	12 East 44th st.
Fred Harte Page (A)	*New York City*	307 West 77th st.
Frederic Edgar Parmly (E E)	*New York City*	134 West 57th st.
Otto Fred Pattberg (M E)	*Jersey City Heights, N. J.*	(74 Sherman pl.)
Albert George Pfeiffer (C)	*New York City*	1057 Lexington ave.
Clarendon Henry Pfeiffer (E E)	*New York City*	333 West 86th st.
James Otis Post (A)	*Bernardsville, N. J.*	11 West 21st st.
Jonothan Sylvester Provost (C E)	*Caldwell, N. J.*	
Arnold William Pupke (E E)	*New York City*	150 West 57th st.
Aaron Isreal Raisman (C E)	*Newark, N. J.*	(50 Wallace st.)

NAME	RESIDENCE	CITY ADDRESS
Max Raymond (C E)	*New York City*	213 East 5th st.
John Adams Read (E E)	*White Plains, N. Y.*	
Juan Pablo Ros, A.B. (M E)	*Cienfuegos, Cuba*	39 West 26th st.
Walter Seeley (C E)	*New York City*	247 West 69th st.
Gustavus Sessinghaus (M E)	*St. Louis, Mo.*	404 Lexington ave.
George Oulton Seward (E E)	*East Orange, N. J.*	(48 Hawthorne ave.)
Charles Lawrence Sheldon (E E)	*Lakewood, N. J.*	
Joseph Charles Sichel (E E)	*New York City*	166 West 80th st.
Alexander Leopold Sinsheimer (E E)	*New York City*	13 East 80th st.
William Allen Smith, Jr. (M E)	*New York City*	102 East 57th st.
Clinton Stephens, Jr. (C E)	*Brooklyn, N. Y.*	(660 Lafayette ave.)
Benjamin Emanuel Stern (A)	*New York City*	32 East 126th st.
Albert Gladding Stillwell (C)	*Brooklyn, N. Y.*	(164 St. John's pl.)
David Stone (A)	*New York City*	229 Third ave.
Harry Herbert Sutro (C)	*New York City*	60 West 49th st.
James Lloyd Tatlock (C E)	*Pelham Manor, N. Y.*	
Francis Kendall Thayer (C E)	*Brooklyn, N. Y.*	(103 Pierrepont st.)
Harold Abbot Titcomb A.B. (M E)	*Brooklyn, N. Y.*	(101 Lafayette ave.)
Ramiro Trapote (C E)	*Pontevedra, Spain*	130 West 29th st.
Bartow White Van Voorhis, 2d (E E)	*New Brighton, S. I.*	
Watson Vredenburgh, Jr. (C E)	*New York City*	Marcher ave., Highbridge
Otto Wagner (M E)	*Red Bank, N. J.*	49 East 72d st.
Charles Adolph Waldenberger (C)	*New York City*	155 East 37th st.
Thomas Henry Walter, Jr. (E E)	*Irvington-on-Hudson.*	
Alan Haworth Ward (M E)	*Brooklyn, N. Y.*	(431 Washington ave.)
Arthur Ware (A)	*New York City*	1285 Madison ave.
Dana Clemmer Wells, A.B. (E E)	*Brooklyn, N. Y.*	(109 Willow st.)
Roger Bradbury Whitman (E E)	*New York City*	232 West 76th st.
Edwin Montgomery Widmayer (E E)	*New York City*	61 West 92d st.
John Townsend Williams, Jr. (C E)	*New York City*	871 Madison ave.
Hans Herman Wolff (C E)	*New York City*	106 West 38th st.
Ralph Garrigue Wright (C)	*St. Louis, Mo.*	123 West 39th st.
Albert Mortimer Young (E E)	*Bay Shore, L. I.*	19 West 31st st.

First Class.....136

POST-GRADUATE COURSE FOR THE DEGREE OF MASTER OF ARTS

Following each student's name are printed, in *italics*, the subjects pursued by him under the Faculty of Mines ; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Jules Louis Saint-Dizier	*Paris, France*	19 West 9th st.

Colorado State School of Mines, E.M.
Mining, Pure Science, Philosophy.

For Degree of Master of Arts.....1

SPECIAL COURSES

NAME	RESIDENCE	CITY ADDRESS
William Peirce Anderson, A.B., E.E. (A)	*Salt Lake City, Utah*	18 East 47th st.
Charles Walter Bellows (A)	*Columbus, Ohio*	72 West 49th st.
Albert Isaac Brady (A)	*Atlanta, Georgia*	106 East 54th st.
Warren Day Brown (E E)	*New York City*	103 East 39th st.
Herman Weis Buemming (A)	*Milwaukee, Wis.*	111 West 47th st.
Seymour Burrell (A)	*Poughkeepsie, N. Y.*	114 East 54th st.
Louis Ernest Doepp (C)	*New York City*	117 East 12th st.
Charles Murphy Gamble (A)	*Columbus, Ohio*	72 West 49th st.
Frederick Arthur Goetze, Jr. (Mech. Eng.)	*Jersey City, N. J.*	(351 Webster ave.)
Harry Stewart Hall, C. E. (A)	*Mount Vernon, N. Y.*	681 Broadway
Charles Lorin Holt, C.E. (A)	*New York City*	105 East 29th st.
Lamar Quintus Jones (A)	*Atlanta, Georgia*	39 West 32d st.
George Edward Krug (A)	*Orange, N. J.*	(69 Essex ave.)
Theodore Lehmann (E E)	*New York City*	125 East 28th st.
John George Lydecker, B.S. (A)	*New York City*	414 West 44th st.
Perry Robinson McNeille (A)	*New York City*	"The Benedick," Washington sq., East
Guy Crandall Mariner (A)	*St. Louis, Mo.*	114 East 54th st.
Jerome Alfred Clinton Morse, Ph.B. (A)	*Brooklyn, N. Y.*	239 Broadway
Kenneth Mackenzie Murchison, Jr., Ph.B. (A)	*New York City*	46 West 57th st.
Clarence Amos Neff (A)	*Delaware, Ohio*	72 West 49th st.
Engelbert Neus, B.S. (A)	*New York City*	454 East 116th st.
Francis Newton (A)	*New York City*	781 Madison ave.
James Washington Paul, B.S., C.E. (M E)	*Moundsville, W. Va.*	157 East 51st st.
William Arthur Payne, B.S. (A)	*Brooklyn, N. Y.*	(1047 Bedford ave.)
Hyman Rosensohn (A)	*New York City*	49 Eldridge st.
James Ross (A)	*Yonkers, N. Y.*	102 West 81st st.
Russell Selfridge, B.S. (A)	*Washington, D. C.*	147 West 45th st.
Frederic Milton Sneed (A)	*Newburgh, N. Y.*	(770 Bushwick ave., Brooklyn, N. Y.)
Horace Claflin Southwick, A.B. (A)	*New York City*	46 West 46th st.
Edward Gleason Spaulding, B.S. (C)	*Burlington, Vermont*	20 East 50th st.
Thomas Johnston Steen (A)	*New York City*	200 East 82d st.
Fitz-Henry Faye Tucker, B.S. (A)	*New York City*	162 West 123d st.
Charles Wiley Tufts (A)	*Pittsburgh, Pa.*	241 West 49th st.
Calvin Spencer Videon, A.M. (M)	*Tottenville, S. I.*	
Albert Ernest Weidinger (A)	*Englewood, N. J.*	P. O. Box 2916

Special Students.....35

SUMMARY

Undergraduate Courses :		
Fourth Class	67	
Third Class	62	
Second Class	96	
First Class	136	
		361
Post-Graduate Courses :		
For Degree of Master of Arts	1	
Specials	35	
		36
Grand Total		397

SCHOOL OF POLITICAL SCIENCE

The following departments are represented in the Faculty:

ECONOMICS AND SOCIAL SCIENCE
POLITICAL ECONOMY AND STATISTICS
FINANCE
SOCIOLOGY
HISTORY
POLITICAL PHILOSOPHY
PUBLIC LAW
CONSTITUTIONAL LAW
ADMINISTRATIVE "
INTERNATIONAL "
ROMAN LAW AND COMPARATIVE JURISPRUDENCE

Officers of the Faculty

JOHN W. BURGESS, Ph.D., LL.D. *Dean and ex-officio Member of the University Council*
EDWIN R. A. SELIGMAN, LL.B., Ph.D. *Secretary*
RICHMOND MAYO-SMITH, Ph.D. *Elected Delegate to the University Council*

Faculty

SETH LOW, LL.D., *President*

JOHN W. BURGESS, Ph.D., LL.D., *Professor of History, Political Science and Constitutional Law*
RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*
MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*
FRANK J. GOODNOW, A.M., LL.B., *Professor of Administrative Law*
EDWIN R. A. SELIGMAN, LL.B., Ph.D., *Professor of Political Economy and Finance*
HERBERT L. OSGOOD, Ph.D., *Adjunct Professor of History*
WILLIAM A. DUNNING, Ph.D., *Adjunct Professor of History and Political Philosophy*
JOHN BASSETT MOORE, A.B., *Hamilton Fish Professor of International Law and Diplomacy*
FRANKLIN H. GIDDINGS, A.M., *Professor of Sociology*
A. C. BERNHEIM, LL.B., Ph.D., *Lecturer on the Political History of the State and City of New York*

Other Officers

FREDERIC BANCROFT, Ph.D., *Prize Lecturer, 1892–95, on American History*
WILLIAM Z. RIPLEY, Ph.D., *Prize Lecturer, 1893–96, on Physical Geography and Anthropology*
GEORGE L. BEER, A.M., *Prize Lecturer, 1894–97, on European History*
ARTHUR M. DAY, A.M., *Assistant in Economics*

GENERAL STATEMENT

The Faculty of Political Science has charge of the university courses of study and research in political and social science, including history, economics, and public law.

The School of Political Science was opened on Monday, the fourth day of October, 1880.

The Faculty aims to give a complete general view of all the subjects of public polity, both internal and external, from the threefold point of view of history, law, and philosophy. The prime aim is therefore the development of all the branches of the political and social sciences. The secondary and practical objects are:

(*a*) To fit young men for all the political branches of the public service.

(*b*) To give an adequate economic and legal training to those who intend to make journalism their profession.

(*c*) To supplement, by courses in public law and comparative jurisprudence, the instruction in private municipal law offered by the Faculty of Law.

(*d*) To educate teachers of political and social science.

To these ends courses of study are offered of sufficient duration to enable the student not only to attend the lectures and recitations with the professors, but also to consult the most approved treatises upon the political sciences and to study the sources of the same.

Young men who wish to obtain positions in the United States Civil Service—especially in those positions in the Department of State for which special examinations are held—will find it advantageous to follow many of the courses under the Faculty of Political Science. Some of the subjects upon which applicants for these positions are examined are treated very fully in the curriculum of the school. Thus, extended courses of lectures are given on political geography and history, diplomatic history and international law, government, and administration.

The work in economics and sociology falls under three heads, viz.: the university courses of instruction in the various departments of social science, the work in the statistical laboratory, and the "field work," or practical work in connection with the Charity Organization Society, the Brooklyn Bureau of Charities, the University Settlement Society of New York City, and the East Side House. These are fully explained in the detailed circular of the School of Political Science.

ADMISSION AND ATTENDANCE

Admission to the School of Political Science is ordinarily granted to students who have completed the curriculum of some college in good standing at least to the close of the junior year. Other persons of suitable age and attainments may be admitted, to pursue special or partial courses, with the consent of the Dean and of the instructor. The lectures are also open to the public, on payment of an auditor's fee, and with the consent of the Dean and of the instructor. Auditors do not have, and cannot receive, any university recognition whatever. There are no formal examinations for admission. Applications for admission to the School of Political Science are received at any time by the Secretary, but it is generally advisable that they be presented, if possible, at the beginning of the academic year.

Students enrolled either in the General, in the Union, or in the Jewish Theological Seminary, in the City of New York, who may be designated for the privilege by the authorities of those institutions and accepted by the President of Columbia College, are admitted to the courses offered by the Faculty of Political Science free of charge for tuition.

By the terms of an alliance between Columbia College and the Teachers College, at Morningside Heights, duly qualified students of the Teachers College are permitted to enter courses offered by the Faculty of Political Science either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia College.

An application for admission may be made by filling out and depositing a registration blank at the office of the Dean of the Faculty of Political Science, or at such other place as may be designated from time to time, for the purpose of registration.

Every student is required to file a list of his studies for the academic year at the time he registers, with the officer in charge of the registration, or within one week thereafter, at the office of the Dean. If he subsequently wishes to make any change in his studies, he must file written notice of his wish at the Dean's office and must obtain the assent of the Dean.

Immediate written notice must be given to the Dean of any change of address.

Admission to the School of Political Science does not imply admission to candidacy for a degree. The conditions of candidacy for the several degrees are given below:

ADMISSION TO OTHER COURSES

Any duly matriculated university student is at liberty to combine courses of study and investigation under this Faculty with courses offered by the School of Arts or by the University Faculties of Philosophy, Law, Medicine, Mines (Applied Science), and Pure Science without any additional fee.

Undergraduate studies of particular value to students in this school are as follows:

	Hours per week
Outline of Mediæval History (1st term)	2
Outline of Modern History (2d term)	2
Outline of European History since 1815 (1st term)	2
Roman History (1st term)	2
American History (1st term)	2
English History (2d term)	2
Elements of Political Economy (2d term)	2
Economic History (2d term)	2

Among the cognate courses given by the Faculty of Philosophy are :

History of philosophy, 2 hours a week ; ethics, 2 hours a week ; biological anthropology, 2 hours a week ; readings in Gaius and Ulpian, 1 hour a week ; readings in Anglo-Saxon law ; courses in the various modern languages, and others.

FEES

See page 15.

CANDIDATES FOR A DEGREE

Students are received as candidates for the degrees of Bachelor of Arts, Master of Arts, Master of Laws, or Doctor of Philosophy.

If the applicant is a candidate for a degree, he must file a certificate, sufficient to furnish evidence of his completion of the junior year, or if he holds a degree from any institution, he must file diplomas or certificates sufficient to furnish evidence of such degree or degrees. Blanks for this purpose may be secured at the Dean's office. Certificates of graduation or dismissal from institutions of learning in foreign countries are also accepted. The certificates should be accompanied by catalogues or calendars of the colleges or other institutions of advanced grade at which the student has previously studied, which must be marked so as to show clearly his course of study there. This condition may be dispensed with in the case of those colleges and institutions whose bachelor's degree is recognized by the University Council as a basis for the higher degrees. For a list of such colleges see page 119.

Students may present themselves for examination for a degree at any time during the year whenever the requirements as to residence and an essay or dissertation have been complied with.

COURSE OF INSTRUCTION

For the courses offered for 1894–95 see departmental statements, as below. For more detailed account of the courses and for the tender of 1895–96, application should be made for circular of the School of Political Science.

History and Political Philosophy, page 71
Public Law and Comparative Jurisprudence, page 77
Economics and Social Science, page 49

Seminaria

Outside of the regular instruction in the various subjects by lecture, it is the intention to furnish the students of the school an opportunity for special investigation of historical, legal, economic, and social questions under the directions of the professor. This is done by means of original papers prepared by the students. The papers are read before the professor and the students, and are then criticised and discussed. There will be at least one seminarium in each subject. The number of meetings and the topics to be discussed are determined each year. Attendance at the seminarium in the major subject is necessary on the part of candidates for the degrees of Master of Arts or Doctor of Philosophy.

There are also preliminary seminaria in history and political economy, designed primarily for those that are not fully prepared for the more advanced work. A preliminary seminarium taken by a candidate for the degree of Bachelor of Arts will count for one hour toward the fifteen hours necessary for a degree.

ORDER OF STUDIES

It is recommended by the Faculty that students who intend to devote their whole time to the courses of study offered by this Faculty, take them in the following order :

First Year

	Hours per week
Constitutional History of Europe, United States, and England	6
Political Economy	3
Science of Finance	2
History of Political Theories	3
Financial History of the United States (2d term)	2
Tariff History of the United States (2d term)	2
Practical Statistics (1st term)	2
Physical Geography and Anthropology (1st term)	2
Historical and Political Geography	1
Political History of New York (1st term)	2
Institutes of Roman Law	2

Second Year

Comparative Constitutional Law of the principal European States and of the United States, Dec. 1st to end of year	3
History of European Law	2
Comparative Administrative Law of the United States, and of the principal European States	2
History of Political Economy	2
Communistic and Socialistic Theories	2
Colonial History of the United States	2
History of Diplomacy (1st term)	2
History of American Diplomacy (2d term)	2
American Political Philosophy	1

	Hours per week
History of the United States, 1848-1861 (2d term)	2
Sociology (1st term)	2
The Family (2d term)	2
Early and Mediæval Church History	4

Third Year

Comparative Jurisprudence	2
International Law	2
Criminal Law	2
International Private Law	1
Law of Municipal Corporations (1st term)	2
Law of Taxation (2d term)	2
Comparative Administration of New York, London, and Paris (2d term)	2
Statistics, Methods, and Results	2
Pauperism and Poor Relief (1st term)	2
Crime and Penology (2d term)	2
Ethnology (2d term)	2
Railroad Problems	2
History of United States, 1860–1877 (2d term)	2
Rise and Growth of the French Monarchy (2d term)	2
Modern and American Church History	4

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Political Science ; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Edward Johnson Abbott	*New York City*	244 East 86th st.
University of City of New York, 1890; Washington College, Tenn., A.B., 1893. Student in Union Theological Seminary. *Economics*, *Social Science*.		
George Allan	*New York City*	41 East 69th st.
Student in Union Theological Seminary. *Sociology*.		
E. N. Allen	*Kansas City, Mo.*	41 East 69th st.
Marshall College, Mo., A.B., 1892 ; Lebanon College, Tenn., B.D., 1894. Student in Union Theological Seminary. *Sociology*.		
Nathan Shaw Aller	*South Bethlehem, Pa.*	41 East 69th st.
Lafayette College, A.B., 1892. Student in Union Theological Seminary. *Sociology*.		
Yokichi Aoki	*Okayama, Japan*	410 West 58th st.
Doshisha University, Japan, 1884–90 ; Yale University, A.M., 1894. *Economics*, *Social Science* ; Philosophy.		
Robert Archibald Ashworth	*New York City*	2 West 46th st.
Columbia College, A.B., 1892 ; A.M., 1894. Student in Union Theological Seminary. *Social Science*.		
Albert Dorrance Baldwin	*Newark, N. J.*	41 East 69th st.
Rutgers College, A.B., 1892. Student in Union Theological Seminary. *Sociology*.		
Charles Brackett Barkley	*New York City*	44 East 69th st.
Economics, *Social Science*.		
Vaclar Bazăta	*New York City*	50 East 70th st.
University of the City of New York. Student in Union Theological Seminary. *Sociology*.		
Conrad Bluhm	*New York City*	700 Park ave.
Wooster University, 1887–88 ; University of Colorado, A.B., 1894. Student in Union Theological Seminary. *Sociology*.		

NAME — RESIDENCE — CITY ADDRESS

Francis Burke Brandt — *Philadelphia, Pa.* — 447 Lexington ave.
Harvard University, A.B., 1892. Columbia College, two years.
Philosophy ; *Social Science.*

George Brauer — *New York City* — 700 Park ave.
Student in Union Theological Seminary.
Sociology.

Oliver Hart Bronson — *New York City* — 50 East 70th st.
Yale University, A.B., 1892.
Student in Union Theological Seminary.
Sociology.

Ralph Lional Brydges — *Islip, N. Y.*
Wycliffe College, Toronto, Canada, three years.
Student in Union Theological Seminary.
Sociology ; Philosophy.

Lester Gladstone Bugbee — *Pleasant Point, Texas* — 455 West 57th st.
University of Texas, B.Lit., 1892 ; A.M., 1893.
University Fellow in History.
History, Economics.

Henry Worthington Bull — *New York City* — 31 West 47th st.
Columbia College, one year.
History, Economics.

Thurston W. Challen — *West Orange, N. J.*
Rutgers College, B.S., 1887 ; M.S., 1890.
Student in General Theological Seminary.
Philosophy ; *Social Science.*

Alexander Lyman Churchill, Jr. — *Plympton, Mass.* — (85 Hanson pl., B'klyn)
Economics, Social Science ; Philosophy.

Bradbury Cilley — *New York City* — 111 East 45th st.
Amherst College, A.B., 1894.
Social Science, Economics, History.

Frederick Merritt Corse — *Burlington, Vt.* — 447 Lexington ave.
University of Vermont, A.B., 1888. Columbia College, A.M., 1892.
Economics, History, Social Science.

Harry P. Corser — *New York City* — 20 East 127th st.
Lafayette College, Ph.B., 1885 ; M.S., 1888.
Student in Union Theological Seminary.
Economics, Social Science.

James Walter Crook — *New York City* — 150 West 64th st.
Oberlin College, A.B., 1891. University of Wisconsin, one year. University of Berlin, two semesters. University Fellow in Economics.
Economics, Social Science, Comparative Jurisprudence.

Thomas Rich Crosswell — *Farmington Falls, Me.* — 851 Lexington ave.
Bowdoin College, A.B., 1891.
Philosophy ; *Sociology.*

John Franklin Crowell — *Philadelphia, Pa.* — 157 East 51st st.
Dartmouth College, one year. Yale University, A.B., 1883.
University Fellow in Sociology.
Social Science, Economics, Public Law.

NAME	RESIDENCE	CITY ADDRESS
Harry Alonzo Cushing	*New York City*	251 West 54th st.
Amherst College, A.B., 1891 ; Columbia College, A.M., 1894. University Fellow in History. *History*, *Economics*.		
Malcolm McGregor Dana	*New York City*	55 West 27th st.
Amherst College, A.B., 1859 ; Middlebury College, Vt., D.D., 1874. *Sociology*, *Economics* ; Philosophy.		
Jaroslaw Dobiás	*New York City*	50 East 70th st.
Kohn Gymnasium, Bohemia, *testimonium maturitatis*, 1892. Student in Union Theological Seminary. *Sociology*.		
Carl Herman Dudley	*Augusta, N. Y.*	50 East 70th st.
Hamilton College, A.B., 1892. Student in Union Theological Seminary. *Sociology*.		
Orville Theodore Fletcher	*McClure, N. Y.*	50 East 70th st.
Hamilton College, A.B., 1892. Student in Union Theological Seminary. *Sociology*.		
Frederic Appleton Flichtner	*Englewood, N. J.*	
Amherst College, A.B., 1894. *History* ; Philosophy.		
Alexander Clarence Flick	*Waterville, O.*	447 Lexington ave.
Otterbein University, A.B., 1894. *History*, *Sociology*.		
Shepherd Ivory Franz	*Jersey City*	(62 Cottage st.)
Columbia College, A.B., 1894. Philosophy ; *Anthropology*.		
Mgrditch Simbad Gabriel	*New York City*	202 West 23d st.
Central Turkey College, Aintab, M.D., 1881. University of Paris, France, one year. *Economics*, *Social Science* ; Philosophy.		
Hugh Timberlich Gary	*Rising Sun, Ind.*	41 East 69th st.
Wabash College, A.B., 1892. Student in Union Theological Seminary. *Sociology*.		
William Lindsay Glenn	*Baltimore, Md.*	Chelsea square
Johns Hopkins University, A.B., 1884 ; University of Maryland, LL.B., 1888. Student in General Theological Seminary. *Social Science*.		
Sigismund Schultz Goldwater	*New York City*	2671 Third ave.
History, *Economics*, *Social Science*.		
Appleton Grannis	*New York City*	175 Ninth ave.
Columbia College, A.B., 1893. *Social Science*, *Economics* ; Philosophy.		
Gustav Haas	*Springfield, Mass.*	41 East 69th st.
Student in Union Theological Seminary. *Sociology*.		
Arthur Cleveland Hall	*New York City*	East Side House, foot of 76th st.
Trinity College (Conn.), A.B., 1888 ; A.M., 1893. University Fellow in Sociology. *Social Science*, *Economics*, *History*.		

NAME	RESIDENCE	CITY ADDRESS

Henry Fritz Hamlin — *Easton, Pa.* — 50 East 70th st.
Lafayette College, A.B., 1894. Student in Union Theological Seminary.
Sociology.

Matthew Brown Hammond — *South Bend, Indiana* — 150 West 64th st.
University of Michigan, Ph.B., 1891; University of Wisconsin, M.L., 1893. University of Tübingen. University of Berlin.
University Fellow in Economics.
Economics, Social Science, History.

Frederick Berg Hartranft — *Hartford, Conn.* — 128 East 54th st.
Vitzthumsgymnasium, Dresden; Friedrichsgymnasium, Breslau.
School of Political Science, Columbia College, one year.
Economics, Social Science, Constitutional Law.

Leonard Williams Hatch — *Oberlin, O.* — 150 West 64th st.
Oberlin College, A.B., 1892; University of Wisconsin, A.M., 1893.
Economics, Social Science, History.

Eugene May Heath — *Louisville, Ky.* — 138 East 47th st.
Economics, History.

John Axford Higgons — *New York City* — 41 East 69th st.
Student in Union Theological Seminary.
Sociology.

Hamilton Holt — *New York City* — 108 West 43d st.
Yale University, A.B., 1894.
Sociology, Economics, History.

James Abner Hunsicker — *Schwenksville, Pa.* — 41 East 69th st.
Ursinus College, A.B., 1892. Student in Union Theological Seminary.
Sociology, Economics; Philosophy.

Maurice Jacobson — *New York City* — 27 Rutgers st.
Gymnasium of Riga, Russia, 1879–85; University of Moscow, 1885–89.
Columbia College, 1892–4.
Economics, Sociology, Comparative Jurisprudence.

Byron Strathmore Johnson — *New York City* — 41 East 69th st.
Lincoln University, A.B., 1893. Student in Union Theological Seminary.
Social Science, History.

Gustav A. Kleene — *Peoria, Ill.* — 241 West 49th st.
University of Michigan, A.B., 1891. University of Berlin, 1893–4. University of Tübingen, 1894.
Economics, Social Science, Public Law.

Shizuo Kondo — *Sagami, Japan* — (126 Gold st., Brooklyn)
Philosophical School of Tokio, Japan, 1888. Ohio Wesleyan University, B.S., 1891.
Economics, Sociology, International Law.

Marion Law — *New York City* — 41 East 69th st.
University of Denver, B.S., 1891; A.B., 1892.
Student in Union Theological Seminary.
Sociology.

Isidor Loeb — *Columbia, Mo.* — 312 West 45th st.
University of Missouri, B.S., 1887; M.S., 1893; LL.B., 1893.
University Fellow in Jurisprudence.
Comparative Jurisprudence, Economics, Administrative Law.

NAME	RESIDENCE	CITY ADDRESS
Frederic L. Luqueer	*Brooklyn, N. Y.*	(907*a* Lafayette ave.)
Columbia College, A.B., 1894. Philosophy; *Social Science.*		
William Edgar McCord	*Vandalia, Ill.*	41 East 69th st.
Blackburn University, Ill., A.B., 1882; A.M., 1885. Student in Union Theological Seminary. *Social Science, Economics, History.*		
John Alexander MacIntosh	*Halifax, N. S.*	41 East 69th st.
Dalhousie College, Halifax, N. S., A.B., 1892. Student in Union Theological Seminary *Sociology.*		
Charles Hamilton McKnight	*Elmira, N. Y.*	175 Ninth ave.
Cornell University, LL.B., 1891. Student in General Theological Seminary. *Sociology.*		
John McMillan		
Magee College, Ireland, A.C., 1887. Student in Union Theological Seminary. *Sociology. Economics*; Philosophy.		
Jno. J. McNulty	*New York City*	58 Morton st.
College of the City of New York, B.S., 1881. University of the City of New York, M.S., 1892; Ph.D., 1893. *Economics, Social Science, Comparative Jurisprudence.*		
Leonard Beecher McWhood	*Newark, N. J.*	(136 Pennsylvania ave.)
Columbia College, A.B., 1894. Philosophy; *Sociology.*		
Walter Taylor Marvin	*New York City*	2099 Fifth ave.
Columbia College, A.B. Student in General Theological Seminary. Philosophy; *Social Science.*		
Byron C. Mathews	*Newark, N. J.*	(36 Kearney st.)
Syracuse University, A.B., 1877; A.M., 1880; Ph.D., 1893. *Sociology.*		
Robert Dodge Merrill	*New Brunswick, N. J.*	41 East 69th st.
Rutgers College, AB., 1893. Student of Union Theological Seminary. *Sociology.*		
James David Merriman	*Litchfield, Maine*	851 Lexington ave.
Bowdoin College, A.B., 1892. *Economics, Social Science, History.*		
Sidney Stuyvesant Meyers	*New York City*	110 East 92d st.
College of the City of New York, one and a half years. *History, Economics.*		
DuBois Schanck Morris	*New York City*	115 West 73d st.
Princeton College, A.B., 1893. Harvard University, one year. *Sociology, Economics*; Philosophy.		
Newbold Morris	*New York City*	19 East 64th st.
Columbia College, LL.B., 1892. *Comparative Jurisprudence, International Law.*		
Max Osterberg	*New York City*	232 East 62d st.
Realschule, Frankfurt-on-Main, nine years. Columbia College, E.E., 1894. *Constitutional Law.*		

NAME	RESIDENCE	CITY ADDRESS
James B. Reynolds	*New York City*	26 Delancey st.

Yale University, A.B., 1884; B.D., 1888. University of Paris, 1889. University of Berlin, 1890. University Fellow in Sociology.
Sociology, *Economics*; Philosophy.

Charles Tomlinson Rittenhouse — *New York City* — 247 West 138th st.
College of the City of New York, two years. Stevens Institute of Technology, M.E, 1893. Columbia College, E.E., 1894.
Pure Science; *Economics*.

Harry Pelham Robbins — *New York City* — 419 Fifth ave.
Columbia College, A.B., 1894.
Economics.

George Willard Rockwell — *Jersey City, N. J.* — (23 Waverley st.)
Colgate University, two years. Student in Union Theological Seminary.
Economics.

Charles Colman Rosewater — *Omaha, Neb.* — 202 West 44th st.
Cornell University, Ph.B., 1894.
Constitutional Law, *Economics*, *Sociology*.

George E. Ruppert — *New York City* — 1116 Fifth ave.
Economics, *History*.

Mortimer Leo Schiff — *New York City* — 932 Fifth ave.
Amherst College, two years.
Economics.

William Schiller — *New York City* — 41 East 69th st.
Koh'n Gymnasium, Bohemia, *testimonium maturitatis*, 1891.
Student in Union Theological Seminary.
Sociology.

Frank Barrows Seeley — *New York City* — 41 East 69th st.
Middlebury College, A.B., 1893. Student in Union Theological Seminary.
Sociology.

Samuel Hartzel Seem — *Bangor, Pa.* — 41 East 69th st.
Lafayette College, A.B., 1892. Student in Union Theological Seminary.
Sociology.

Charles Norman Shepard — *Bristol, Conn.* — Chelsea square
Trinity College, Conn., A.B., 1891; A.M., 1894.
Student in General Theological Seminary.
Philosophy; *Sociology*.

William Robert Shepard — *Brooklyn, N. Y.* — (325 Macon st.)
Columbia College, A.B., 1893; A.M., 1894.
University Fellow in History.
History, *Public Law*.

William Gustav Sienkaemper — *New York City* — 41 East 69th st.
Mission House College, A.B., 1892. Student in Union Theological Seminary.
Sociology.

Orville Lincoln Sigafoos — *Easton, Pa.* — 50 East 70th st.
Lafayette College, A.B., 1894. Student in Union Theological Seminary.
Sociology.

Herman Simpson — *New York City* — 128 Allen st.
College of the City of New York, three years. University of the City of New York, A.B., 1894.
Sociology, *Economics*, *History*.

NAME	RESIDENCE	CITY ADDRESS
Delos DeWolf Smyth	*Clinton, N. Y.*	Murray Hill Hotel

Hamilton College, A.B., 1890; A.M., 1893. Heidelberg University, 1890–1; Harvard University, 1891–92.
Economics, Social Science, Comparative Jurisprudence.

Isaac Spectorsky — *New York City* — 143 Clinton st.
Cornell University, two years. University of the City of New York, two years.
Economics

Charles Worthen Spencer — *Waterville, Me.* — 109 West 76th st.
Colby University, A.B., 1890; University of Chicago, two years.
History, Economics.

William S. Spencer — *Montpelier, Vt.* — 41 East 69th st.
Boston University, A.B., 1893. Student in Union Theological Seminary.
Sociology.

Edward Emerson St. John — *Salem, Md.* — 41 East 69th st.
Wabash College, A.B., 1890; A.M., 1893.
Student in Union Theological Seminary.
Sociology, Economics.

Frederick Emerson Stockwell — *New York City* — 41 East 69th st.
Brown University, A.B., 1890. Student in Union Theological Seminary.
Sociology.

George Storner — *New York City* — 41 East 69th st.
Student in Union Theological Seminary.
Sociology.

Shivoshi Tada — *Tokio Japan* — 41 East 69th st.
Graduate student of the Meiji Gakuin, 1891.
Student in Union Theological Seminary.
Sociology.

Ernest D. Thompson — *New York City* — 66 East 49th st.
Columbia College, Ph.B., 1881; LL.B., 1880.
Constitutional Law, International Law, Social Science.

Charles W. Tooke — *New York City* — 601 Lexington ave.
Syracuse University, A.B., 1891. Cornell University, 1893–4.
University Fellow in Administrative Law.
Administrative Law, Constitutional Law, Economics.

Walter S. Ufford — *New York City* — 26 Delancey st.
Amherst College, A.B., 1882; A.M., 1885.
Yale Divinity School.
Sociology, Economics, Political Philosophy

Henry van Haagen — *Franklin, Wis.* — 41 East 69th st.
Mission House College, A.B., 1892. Student in Union Theological Seminary.
Sociology.

Henry Gustavus Vick — *New York City* — 260 West 54th st.
University of North Dakota, A.B., 1893.
University Fellow in Political Science.
Economics, Social Science, History.

Duncan Wallace — *Selma, Ala.* — 41 East 69th st.
Cumberland University, A.B., 1892; B.D., 1894.
Student in Union Theological Seminary.
Sociology.

Milton Weil — *New York City* — 35 West 74th st.
History, Economics.

NAME	RESIDENCE	CITY ADDRESS
Jeremiah Van Dorport Wemple	*Schenectady, N. Y.*	41 East 69th st.
Union College, A.B., 1892. Student in Union Theological Seminary. *Economics.*		
Arthur Wessell	*New York City*	47 West 70th st.
History, Economics.		
Joseph Alexander Wright	*Columbus, Indiana*	106 East 55th st.
DePauw University, Ph.B., 1893. Student in Union Theological Seminary. *Comparative Jurisprudence, Administrative Law, Economics.*		
Oscar Woodward Zeigler		41 East 69th st.
Johns Hopkins University, A.B., 1890. College of New Jersey, A.M., 1894. Student in Union Theological Seminary. *Sociology, Economics.*		

Total.... 102

MEMBERS OF THE SCHOOL OF ARTS, PURSUING COURSES OF INSTRUCTION IN THE DEPARTMENTS SPECIFIED.

Francis Eugene Bauch *Economics, Criminal Law.*	*Brooklyn, N. Y.*	(1059 Greene ave.)
Herbert Doty Brown *Economics.*	*New York City*	9 West 129th st.
George P. Bryant *History, Economics.*	*New York City*	44 West 9th st.
William L. Cahn *History, Economics.*	*New York City*	50 East 72d st.
Philetus Mortimer Capen *Criminal Law.*	*New York City*	48 East 63d st.
Lewis N. Chase *History.*	*Riverside, Cal.*	142 West 44th st.
Frederick Morse Cutler *Criminal Law, Economics.*	*New York City*	2109 Madison ave.
W. Sanford Evans *History, Economics.*	*New York City*	4 West 33d st.
John Ewen *Criminal Law, Economics.*	*Spuyten Duyvil*	
Clarence Randolph Freeman *Criminal Law.*	*New York City*	123 East 74th st.
William O. Gennert *History, Economics.*	*Greenville, N. J.*	24 East 13th st.
Felix Mortimer Gernsheim *Criminal Law, Economics.*	*New York City*	1 East 44th st.
Victor William Hungerford *Criminal Law.*	*New York City*	121 West 69th st.
Conrad Saxe Keyes *Criminal Law, History.*	*Brooklyn, N. Y.*	(27 Monroe st.)
Maulsby Kimball *Criminal Law, Economics.*	*New York City*	38 West 34th st.

NAME	RESIDENCE	CITY ADDRESS
Arthur Kline Kuhn *Criminal Law, History.*	*New York City*	32 West 84th st.
Edward Lazansky *Criminal Law.*	*Brooklyn, N. Y.*	(224 Carlton ave.)
William Thomas Mason *Criminal Law, History.*	*New York City*	37 West 48th st.
George Fred'k Middendorf, Jr. *Criminal Law.*	*Brooklyn, N. Y.*	(90 Schenck ave.)
Rudolph Neeser *History, Economics.*	*New York City*	2 West 33d st.
Louis Hasbrouck Newkirk *Criminal Law.*	*New York City*	38 West 34th st.
Edward C. Parish *Economics.*	*New York City*	1 West 19th st.
Henry Perry Pogson *Criminal Law, History.*	*West Farms, N. Y.*	
Frank J. Pope *Economics, History.*	*Elizabeth, N. J.*	12 West 31st st.
James N. Rosenberg *Economics, History.*	*New York City*	122 West 87th st.
Frederick White Shepard *Criminal Law.*	*Brooklyn, N. Y.*	(81 Columbia Heights)
Frederick H. Sill *History.*	*New York City*	243 West 45th st.
Abram Richard Stern *Economics.*	*New York City*	55 West 50th st.
Clarence Storm *History, Economics.*	*New York City*	41 West 81st st.
William D. Street *Economics.*	*Brooklyn, N. Y.*	(173 Macon st.)
David Houghtaling Taylor *Criminal Law.*	*New York City*	16 East 56th st.
Stephen Fraser Thayer *Criminal Law, History.*	*Yonkers, N. Y.*	
F. O. Virgin *History.*	*New York City*	16 East 125th st.
Richmond Weed *Criminal Law.*	*Flushing, L. I.*	

Total.....34

CANDIDATES FOR THE DEGREE OF LL. B. TAKING PART OF THEIR STUDIES UNDER THIS FACULTY.

NAME	RESIDENCE	CITY ADDRESS
William B. Arnold *Criminal Law.*	*North Adams, Mass.*	127 West 48th st.

NAME	RESIDENCE	CITY ADDRESS
Lawrence Atterbury Columbia College, A.B., 1894. *Criminal Law.*	*New York City*	141 West 86th st.
Berkeley Clarence Austin College of the City of New York, A.B., 1893. *Comparative Jurisprudence.*	*Cranford, N. J.*	
Shelley F. Austin *Comparative Constitutional Law.*	*Cranford, N. J.*	
Grosvenor Hyde Backus Amherst College, B.S., 1894. *Criminal Law.*	*Brooklyn, N. Y.*	(57 Livingston st.)
Major W. Barber *Criminal Law.*	*Brooklyn, N. Y.*	(181 McDonough st.)
George R. Beach Columbia College. *Criminal Law.*	*Jersey City, N. J.*	(105 Hoboken ave.)
Solomon Charles Bernstein College of the City of New York, B.S., 1892 ; Columbia, A.M., 1894. *Economics, Public Law, History.*	*New York City*	138 Henry st.
Milton Elvin Blanchard Williams College, two years. *Criminal Law.*	*Newark, N. J.*	(589 High st.)
Tristan Charles Boekelman Columbia College. *Criminal Law.*	*New York City*	106 West 45th st.
Francis Halsey Boland Cornell University, M.M.E., 1892. *Criminal Law.*	*Brooklyn, N. Y.*	(194 Hancock st.)
J. Frederick Brommer *Criminal Law.*	*Brooklyn, N. Y.*	(183 Hooper st.)
Edward Stelle Bronson, Jr. Columbia College, A.B., 1892 ; A.M., 1893. *Comparative Jurisprudence.*	*Brooklyn, N. Y.*	(49 Garden pl.)
Edward W. Burdick *Criminal Law.*	*Syracuse, N. Y.*	Pelham Manor
Russell Ely Burke Columbia College, A.B., 1894. *Political Philosophy, Comparative Jurisprudence.*	*New York City*	17 East 55th st.
John Jacob Burrows *Criminal Law, History, Economics.*	*Boonville, N. Y.*	150 East 30th st.
Nathan P. Bushnell *Comparative Jurisprudence, International Law.*	*Montrose, N. Y.*	
Emanuel Siegfried Cahn College of the City of New York, B.S., 1894. *Criminal Law, History, Economics.*	*New York City*	161 East 79th st.
James Dickson Carr Rutgers College, A.B., 1892. *Administrative Law, Comparative Jurisprudence.*	*New York City*	495 Sixth ave.

NAME	RESIDENCE	CITY ADDRESS
George Bowen Case Yale University, A.B., 1894. *Criminal Law, History.*	*Kansas City, Mo.*	11 East 46th st.
Thomas Ives Chatfield Yale University, A.B., 1893. *Constitutional Law.*	*Owego, N. Y.*	173 Fifth ave.
Isidore Cohn *Criminal Law.*	*Buffalo, N. Y.*	142 Madison st.
Bernard M. Cone Johns Hopkins University, A.B., 1894. *Criminal Law.*	*Baltimore, Md.*	116 West 74th st.
George Stanislaus Connell Columbia College, A.B., 1894. *Economics, Comparative Jurisprudence.*	*New York City*	154 West 87th st.
Alexander Mitchell Crane Harvard University, A.B., 1894. *Criminal Law.*	*Scarsdale, N. Y.*	
Andrew Wright Crawford University of Pennsylvania, A.B., 1893. *Criminal Law.*	*Bryn Mawr, Pa.*	160 West 92d st.
Edward Irving Croll *Criminal Law.*	*Newark, N. J.*	(463 Broad st.)
Constantine Stanislaus Cummings Christian Brothers College, St Louis, Mo., A.B., 1892. *Criminal Law.*	*St. Louis, Mo.*	101 East 25th st.
Melvin Henry Dalberg Columbia, two years. *Criminal Law.*	*New York City*	78 East 91st st.
Eugene Howell Daly Columbia College, A.B., 1894. *Comparative Jurisprudence, Economics.*	*New York City*	2050 Madison ave.
Lee Sumner Day Oberlin College, 1889–92. *Comparative Jurisprudence.*	*Elyria, O.*	1695 Broadway
Frederick Denicke University of California, A.B., 1894. *Criminal Law.*	*San Francisco, Cal.*	208 East 16th st.
Asa D. Dickinson *Criminal Law.*	*Bay Ridge, N. Y.*	
John G. Dunbar *Administrative Law.*	*Brooklyn, N. Y.*	(940 Pacific st.)
William C. Dunbar *Administrative Law.*	*Brooklyn, N. Y.*	(940 Pacific st.)
Frederick Dwight Yale University, A.B., 1894. *Criminal Law.*	*Brooklyn, N. Y.*	(51 Remsen st.)
Sidney E. Eads Ohio Wesleyan University, three years. *Administrative Law.*	*Paris, Ill.*	787 Lexington ave.

NAME	RESIDENCE	CITY ADDRESS
Jesse W. Ehrich College of the City of New York. *Economics, Social Science, History, Criminal Law.*	*New York City*	54 West 75th st.
Robert W. B. Elliott University of the South, A.M., 1894. *Criminal Law.*	*Sewanee, Tenn.*	8 West 34th st.
Henry Lane Eno Yale University, A.B., 1894. *Criminal Law.*	*Saugatuck, Conn.*	309 Lexington ave.
Moses Feltenstein College of the City of New York. *Criminal Law.*	*New York City*	170 Henry st.
Charles Lewis Fleming, Jr. *Criminal Law.*	*New York City*	845 St. Nicholas av.
David Joseph Fox College of the City of New York, B.S., 1894. *History, Economics, Criminal Law.*	*New York City*	127 East 79th st.
Albert Fullerton Kansas State University, A.B., 1893. *Criminal Law.*	*Atchison, Kansas*	357 West 55th st.
Joseph Whitney Ganson Harvard University, A.B., 1892. *Criminal Law.*	*New York City*	47 West 33d st.
Charles Henry George *Administrative Law.*	*Orange, N. J.*	(89 Hillside av.)
Benjamin Thorn Gilbert Yale University. *Criminal Law.*	*Utica, N. Y.*	
Charles Monteith Gilpin St. John's College, (Md.) A.B., 1894. *Criminal Law.*	*Elkton, Md.*	444 Lexington ave.
George Selden Goodrich Columbia College. *Criminal Law.*	*Brooklyn, N. Y.*	(416 Clinton ave.)
Daniel Eddie Griswold Williams College. *Criminal Law.*	*Lyme, Conn.*	359 Lexington ave.
Meredith Hare Yale University, A.B., 1894. *Criminal Law.*	*New York City*	28 West 11th st.
Sydney Wesley Hart St. Francis Xavier, Ph.B., 1894. *Comparative Jurisprudence.*	*Hoboken, N. J.*	(232 Washington st.)
Lawrence Hasbrouck *Criminal Law.*	*New York City*	39 West 90th st.
Alfred Renold Heinemann *Criminal Law.*	*Chicago, Ill.*	645 Madison ave.

NAME	RESIDENCE	CITY ADDRESS
Emanuel Hertz	*New York City*	449 East 80th st.
College of the City of New York, A.B., 1892; Columbia College, A.M., 1894. *International Law*, *Constitutional Law*, *Comparative Jurisprudence*, *History*.		
Otto Theodore Hess	*New York City*	307 West 86th st.
Columbia College, A.B., 1894. Philosophy; *Comparative Jurisprudence*, *Administrative Law*.		
Harry Mason Hewitt	*New York City*	261 East 78th.
Administrative Law.		
Henry Budelman Heylman	*New York City*	561 Buckhout st.
College of the City of New York, A.B., 1894. *History*, *Economics*, *Criminal Law*.		
William Henry Hirsch	*New York City*	265 West 21st st.
College of the City of New York, A.B., 1894. *History*, *Economics*, *Criminal Law*.		
Edwin O. Holtner	*Helena, Montana*	11 East 46th st.
Yale University, A.B., 1894. *Criminal Law*.		
James Cox Howell	*Highland Mills, N. Y.*	
Columbia College, A.B., 1894. *Constitutional Law*, *Comparative Jurisprudence*.		
Lloyd Mortimer Howell	*West Hampton, N. Y.*	120 Madison ave.
Yale University, A.B., 1894. *Criminal Law*.		
Ralph Hughes	*Liberty, Mo.*	38 West 61st st.
William Jewell College (Liberty, Mo.), A.B., 1890. *Criminal Law*.		
Robert Selden Huse	*Highland Falls, N. Y.*	8 West 34th st.
University of the South. *Criminal Law*.		
Robert Hamilton Hutchins	*Brandon, Vt.*	147 West 61st st.
Trinity College, Conn., A.M., 1894. *Criminal Law*.		
Maurice Samuel Hyman	*New York City*	102 West 77th st.
Harvard University, A.B., 1894. *Criminal Law*.		
Alfred Walker Ireland	*New York City*	44 West 47th st.
Criminal Law.		
Ralph Henry Johnson	*Friend, Neb.*	159 East 51st st.
State University of Nebraska, A.B., 1894. *Criminal Law*.		
William C. B. Kemp	*New York City*	751 Fifth ave.
Columbia College. *Administrative Law*, *International Law*.		
Charles Henry Ketcham	*Yonkers, N. Y.*	
Criminal Law.		
James T. Kilbreth, Jr.	*Southampton, L. I.*	"The Dakota," Central P. R. W.
Harvard University A.B. 1894. *Criminal Law*.		

NAME	RESIDENCE	CITY ADDRESS
Clarence Broughton Kilmer	*Rock City Falls, N. Y.*	9 East 57th st.
College of the City of New York. Columbia College. *Criminal Law.*		
John Duggan King	*Bergenfield, N. J.*	544 West 43d st.
St. John's College, New York, A.B., 1894. *Criminal Law.*		
Arthur Charles Kletzsch	*Milwaukee, Wis.*	148 East 56th st.
Columbia College, A.B., 1893. *Comparative Jurisprudence.*		
Arthur Knox	*New York City*	472 Mott ave.
College of the City of New York, A.B., 1892; Columbia College, A.M., 1894. *Comparative Jurisprudence International Law.*		
William R. A. Koehl	*New York City*	980 Sixth ave.
Comparative Constitutional Law.		
Edgar Julius Kohler	*New York City*	115 East 71st st.
College of the City of New York, A.B., 1893. *Constitutional Law.*		
Richard Lawrence	*New York City*	13 East 22d st.
Columbia College. *Criminal Law.*		
Harry Cohen Levey	*New York City*	13 West 88th st.
Washington and Jefferson College, B.S., 1894. *Criminal Law, Economics.*		
Walter Henry Liebmann	*New York City*	42 East 72d st.
Columbia College, A.B., 1894. *Criminal Law.*		
Herbert R. Limburger	*New York City*	507 Madison ave.
Yale University, two and one-half years. *Criminal Law, History.*		
Campbell Erie Locke	*New York City*	23 West 53rd st.
Columbia College, A.B., 1894. *Comparative Jurisprudence.*		
Gerald Arthur Lowe	*Plainfield, N. J.*	
Lehigh University, two years. *Criminal Law.*		
Mark Lee Luther	*Albion, N. Y.*	153 West 48th st.
Harvard University, three years. *Criminal Law.*		
Charles Eddie McCarthy	*Troy, N. Y.*	18 East 58th st.
Criminal Law.		
William Townsend McCoun, Jr.	*Oyster Bay, L. I.*	
Criminal Law.		
John Joseph McElhiney	*Long Branch, N. J.*	
Criminal Law.		
Moncure March	*Easton, Pa.*	45 West 55th st.
Lafayette College, A.B., 1892. *Criminal Law.*		
Frank Heath Mason	*Greenwich, N. Y.*	104 West 48th st.
Criminal Law.		

NAME	RESIDENCE	CITY ADDRESS
Arthur Mayer *Criminal Law.*	*New York City*	415 West 145th st.
Samuel M. Michel College of the City of New York. *Criminal Law.*	*New York City*	246 East 51st st.
Marcus A. Miller *Criminal Law.*	*Wilkes Barre, Pa.*	774 Madison ave.
Walter Jefferson Moore Harvard University, A.B., 1894. *Criminal Law.*	*New York City*	60 East 49th st.
Edward Henry Mount *Criminal Law.*	*Mahopac Falls, N. Y.*	
Frederick Felix Neuman Columbia College, A.B., 1894. *Administrative Law.*	*New York City*	604 Lexington ave.
Samuel Frederick Nichols *Criminal Law.*	*Beatrice, Neb.*	(Rutherford, N. J.)
James F. O'Beirne College of St. Francis Xavier, A.B., 1893; A.M., 1894. *Constitutional Law.*	*New York City*	201 East 20th st.
Nathan Ottinger College of the City of New York, B.S., 1892; Columbia College, A.M., 1894. *Comparative Jurisprudence.*	*New York City*	110 East 61st st.
David Parry *Criminal Law.*	*Highland Falls, N. Y.*	(60 Hemrod st., Brooklyn)
Benjamin G. Paskusz College of the City of New York, A.B., 1894. *Crimnal Law, History, Economics.*	*New York City*	242 East 72d st.
Isidro Pendas, Jr. *Criminal Law.*	*Brooklyn, N. Y.*	(22 Brevoort pl.)
Frank Lyon Polk Yale University, A.B., 1894. *Criminal Law.*	*New York City*	7 East 36th st.
Arthur M. Price Columbia, one year. *Criminal Law, Economics, History.*	*New York City*	113 West 75th st.
John Gordon Quigley Harvard University, three years. *Criminal Law.*	*Goshen, N. Y.*	(Astoria, N. Y.)
Harry Gardner Rand *Criminal Law.*	*Troy, N. Y.*	18 East 58th st.
Charles Conway Reiley *Criminal Law.*	*New York City*	145 East 34th st.
Raymond Reubenstein College of the City of New York, A.B., 1892; Columbia College, A.M., 1894. *Comparative Jurisprudence.*	*New York City*	129 East 82d st.

NAME	RESIDENCE	CITY ADDRESS
Lester R. Riggs University of Utah, two years. *Comparative Jurisprudence.*	*Salt Lake City, Utah*	148 East 55th st.
William Delamater Riter University of Utah. *Criminal Law, History.*	*Salt Lake City, Utah*	148 East 55th st.
Edgar Walter Roovers *Criminal Law.*	*Brooklyn, N. Y.*	(170 Dean st.)
George Ross College of the City of New York, 1890–93. *Comparative Jurisprudence.*	*New York City*	128 West 132d st.
Paul Brown Scarff Hanover College, four and three-quarter years. *Criminal Law.*	*Burlington, Ia.*	329 East 69th st.
Joseph Martin Schenck *Comparative Constitutional Law.*	*Binghampton*	136 East 61st st.
Henry Schoenherr, Jr. *Criminal Law.*	*Brooklyn, N. Y.*	(150 Wythe ave.)
Walter Stanley Schütz Trinity College, A.B., 1894. *Criminal Law.*	*Hartford, Conn.*	147 West 61st st.
Lorenzo Benjamin Scranton Napa College, B.S., 1886; A.B., 1890. *Economics, Sociology, Criminal Law.*	*Lower Lake, Cal.*	108 West 49th st.
Edward S. Seidman Buchtel College, A.B., 1893. *Administrative Law.*	*New York City*	649 Lexington ave.
Oscar Roland Seitz Columbia College, A.B., 1894. *Constitutional Law, Administrative Law, Economics.*	*New York City*	1186 Lexington ave.
Edward A. Selfridge, Jr. University of California, A.B., 1894. *Criminal Law.*	*San Francisco, Cal.*	147 West 45th st.
Arthur Francis Sellick *Criminal Law.*	*Lockport, N. Y.*	76 West 48th st.
Frederick Nicholas Sinks Yale University, Ph.B., 1894. *Criminal Law.*	*Columbus, O.*	(Bayonne, N. J.)
Harry George Smith College of the City of New York, four years. *Criminal Law.*	*New York City*	924 Third ave.
Max Stadie *Criminal Law.*	*New York City*	186 East 111th st.
Harry Steinert, Jr. College of the City of New York, two years. *Criminal Law.*	*New York City*	221 East 53d st.
Robert William Stewart College of the City of New York, two years. *Criminal Law.*	*New York City*	123 West 11th st.

NAME	RESIDENCE	CITY ADDRESS
William Law Stout	*Jersey City, N. J.*	40 Manhattan sq.
Comparative Constitutional Law.		
Louis Stürcke	*New York City*	423 East 84th st.
Realschule at Bremen, Germany, *testimonium maturitatis*, 1884.		
Administrative Law, Constitutional Law, Economics.		
Samuel Sturtz	*New York City*	301 West 44th st.
College of the City of New York, 1889–94.		
Criminal Law.		
Clarence E. Sutherland	*Malcom, N. Y.*	65 East 59th st.
Criminal Law.		
Ignatius Sutherland	*Brooklyn, N. Y.*	(46 St. John's pl.)
Criminal Law.		
Algernon Thomas Sweeney	*Newark, N. J.*	(144 Green st.)
Michigan Agricultural College, B.S., 1891.		
Comparative Jurisprudence, International Law.		
Charles Robert Swords	*New Hamburgh, N. Y.*	29 East 28th st.
Columbia College, A.B., 1894.		
Criminal Law.		
Lawrence Arnold Tanzer	*New York City*	109 West 77th st.
Harvard University, A.B., 1894.		
Criminal Law.		
Russell L. Tarbox	*Batavia, N. Y.*	61 West 50th st.
Williams College, A.B., 1892.		
Comparative Jurisprudence.		
George Ogden Thomas	*Topeka, Kansas*	61 West 54th st.
Criminal Law, History.		
Robert William Thompson, Jr.	*New York City*	229 West 97th st.
College of the City of New York, A.B., 1893; Columbia College, A.M., 1894.		
Constitutional Law, Administrative Law, History, Comparative Jurisprudence.		
Nathaniel Compton Toms	*Morristown, N. J.*	
Criminal Law.		
John Garrett Underhill	*Brooklyn, N. Y.*	(97 Lafayette ave.)
Polytechnic Institute, Brooklyn, A.B., 1894.		
Criminal Law.		
Henry Ayres Uterhart, A.B.	*New York City*	552 East 85th st.
Columbia College, 1894.		
Constitutional Law, History, Comparative Jurisprudence.		
George Finch Van Slyck	*New York City*	246 West 57th st.
Yale University, A.B., 1894.		
Criminal Law.		
William Bell Wait, Jr.	*New York City*	412 Ninth ave.
Columbia College, LL.B., 1894.		
Conflict of Private Law, International Law, Comparative Jurisprudence.		
Clifton W. Wardell	*Brooklyn, N. Y.*	(72 Orange st.)
Williams College, two and one-half years.		
Criminal Law.		
Frederic DeWitt Wells	*New York City*	Hotel Waldorf.
Columbia College, A.B., 1894.		
Philosophy; *Administrative Law, Comparative Jurisprudence.*		

NAME	RESIDENCE	CITY ADDRESS
Charles R. Wendt Stevens Institute of Technology. *Criminal Law.*	*New York City*	25 East 37th st.
Harry D. West Yale University, one year. *Criminal Law.*	*Plainfield, N. J.*	(718 Central ave.)
Abraham Wielar College of the City of New York, two years. *Criminal Law.*	*New York City*	251 East 84th st.
James Dawes Williams Yale University, A.B., 1894. *Criminal Law.*	*North Adams, Mass.*	Murray Hill Hotel
Samuel Lee Wolff Harvard University, A.B., 1892. *Constitutional Law, Economics, Comparative Jurisprudence.*	*New York City*	125 East 73d st.

Total..... 148

Student in the Medical School taking courses under this Faculty.

Robert B. Ludington Amherst College, B.S., 1892. *History.*	*New York City*	44 East 69th st.

Total..... 1

Students not candidates for a degree studying under the two Faculties of Political Science and Law.

Alexander Alexander *Criminal Law.*	*New York City*	147 East 62d st.
Carroll Hess Allen *Criminal Law.*	*Los Angeles, Cal.*	(39 Thirteenth ave., Newark, N. J.)
George E. Arents School of Mines, one year. *Criminal Law.*	*New York City*	38 West 57th st.
Allan C. Bakewell *Criminal Law.*	*Pittsburgh, Pa.*	Buckingham Hote[l]
James Searle Barclay, Jr. *Criminal Law.*	*New York City*	64 West 38th st.
Daniel Mayer Beach Hobart College, B.L., 1892. *Criminal Law.*	*Watkins, N. Y.*	9 East 27th st.
William M. Benjamin *Criminal Law.*	*Garrison-on-Hudson.*	
John Morton Boland *Criminal Law.*	*Brooklyn, N. Y.*	(194 Hancock st.)

NAME	RESIDENCE	CITY ADDRESS
Alfred Wreaks Booraem *Comparative Jurisprudence.*	*New York City*	48 West 82d st.
William O. Carpenter *Criminal Law.*	*Brooklyn, N. Y.*	(165 New York Ave.)
William H. Clapp *Criminal Law.*	*New York City*	125 West 45th st.
Ewing Leo Deputy *Criminal Law, Economics, History.*	*Portsmouth, O.*	106 East 55th st.
Faber C. Donahue University of Notre Dame. *Criminal Law.*	*Sandusky, O.*	14 East 29th st.
George Henry Dresler *Criminal Law.*	*New York City*	119 West 13th st.
Charles Edwin Heckler *Constitutional Law.*	*Chicago, Ill.*	121 West 48th st.
Maudeville Cornelius Jacobus *Criminal Law.*	*Englewood, N. J.*	
Harry Partridge Keith *Criminal Law.*	*Hempstead, L. I.*	
Albert Daniel Morstadt *Criminal Law.*	*New York City*	234 East 118th st.
John H. Oppenheimer College of the City of New York, two years. *Criminal Law.*	*New York City*	207 West 56th st.
Henry A. Palmer *Criminal Law.*	*Cranston, R. I.*	161 West 102d st.
Joshua R. H. Potts *Criminal Law.*	*New Brunswick, N. J.*	228 East 40th st.
James Edward Roderick *Criminal Law.*	*Hazelton, Pa.*	59 East 127th st.
Adolph A. Rubino *Criminal Law.*	*New York City*	1698 Lexington ave.
Irving E. Schwarz *Criminal Law.*	*Dover, N. J.*	
Dudley D. Sicher *Criminal Law.*	*New York City*	54 East 65th st.
Bernard L. Tone *Criminal Law.*	*Hartsdale, N. Y.*	18 Wall st.
Peter D. Van Oosterhout University of Iowa, Ph.B., 1893; LL.B., 1894. *Comparative Jurisprudence.*	*Orange City, Ia.*	150 East 53d st.
Andrew Nelson Walker *Criminal Law.*	*Nicholson, Pa.*	(East Orange, N. J.)
Charles M. Whitney, Jr. *Criminal Law.*	*Brooklyn, N. Y.*	(20 Pierrepont st.)

Total.....29

GRAND TOTAL ENROLLED UNDER THE UNIVERSITY FACULTY OF POLITICAL SCIENCE.....314

SUMMARY OF GRADUATE STUDENTS

Columbia College	36
College of the City of New York	15
Yale University	15
Harvard University	8
Amherst College	7
Lafayette College	6
Rutgers College	4
Trinity College, Conn	4
Cornell University	3
Hamilton College	3
Johns Hopkins University	3
College of New Jersey	2
Bowdoin College	2
Koh'n Gymnasium, Bohemia	2
Michigan University	2
Middlebury College, Vt	2
Mission House College	2
Oberlin College	2
St. Francis Xavier	2
Syracuse University	2
University of California	2
University of the City of New York	2
University of Wisconsin	2
Wabash College	2
Blackburn University, Illinois	1
Boston University	1
Brown University	1
Central Turkey College	1
Christian Brothers College, St. Louis, Mo	1
Colby University	1
Cumberland University	1
Dalhousie College, Canada	1
De Pauw University	1
Hobart College	1
Kansas State University	1
Lebanon College	1
Lincoln University	1
Marshall College, Mo	1
Magee College	1
Napa College	1
Ohio Wesleyan University	1
Otterbein University	1
Polytechnic Institute, Brooklyn	1
Realschule, Bremen, Germany	1
St. John's College, Md	1
St. John's College, N. Y	1
Stevens Institute of Technology	1
Union College	1
University of Colorado	1
University of Denver	1
University of Iowa	1
University of Maryland	1
University of Missouri	1
University of Nebraska	1
University of North Dakota	1
University of Pennsylvania	1
University of the South	1
University of Texas	1
University of Vermont	1
Ursinus College	1
Washington College, Tenn	1
Washington and Jefferson College	1
William Jewell College	1
Williams College	1

64 Institutions.

Total	170
Deduct for duplication	12
Total	158

DEGREES HELD BY GRADUATE STUDENTS

Bachelor of Arts	120
Bachelor of Philosophy	8
Bachelor of Science	14
Bachelor of Divinity	3
Bachelor of Laws	6
Bachelor of Letters	2
Testimonium Maturitatis	3
Certificate of Arts	1
Electrical Engineer	2
Mining Engineer	1
Master of Mechanical Engineering	1
Master of Arts	25
Master of Science	4
Master of Letters	1
Doctor of Philosophy	2
Doctor of Divinity	1
Doctor of Medicine	1
	195
Deduct for students holding more than one degree	37
	158
Students without degrees, other than seniors in the School of Arts	122
Members of the School of Arts	34
	314

SCHOOL OF PHILOSOPHY

The following departments are represented in the Faculty :

ENGLISH
ENGLISH LANGUAGE AND LITERATURE
LITERATURE
RHETORIC
GERMANIC LANGUAGES AND LITERATURES
GREEK LANGUAGE AND LITERATURE
IRANIAN LANGUAGES
LATIN LANGUAGE AND LITERATURE
SEMITIC LANGUAGES AND RABBINICAL LITERATURE
ROMANCE LANGUAGES AND LITERATURES
SANSKRIT
PHILOSOPHY AND EDUCATION

Officers of the Faculty

NICHOLAS MURRAY BUTLER, Ph.D. . . . *Dean and ex-officio Member of the University Council*

EDWARD DELAVAN PERRY, Ph.D. . . . *Secretary and elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

HENRY DRISLER, LL.D., *Professor Emeritus of the Greek Language and Literature*

AUGUSTUS CHAPMAN MERRIAM, Ph.D., *Professor of Greek Archæology and Epigraphy*

THOMAS RANDOLPH PRICE, M.A., LL.D., *Professor of the English Language and Literature*

HJALMAR HJORTH BOYESEN, Ph.D., *Professor of the Germanic Languages and Literatures*

HARRY THURSTON PECK, Ph.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy, Ethics, and Psychology, and Lecturer on the History and Institutes of Education*

WILLIAM HENRY CARPENTER, Ph.D., *Adjunct Professor of the Germanic Languages and Literatures*

JAMES MCKEEN CATTELL., Ph.D., *Professor of Experimental Psychology*

EDWARD DELAVAN PERRY, Ph.D., *Professor of Sanskrit*

ABRAHAM VALENTINE WILLIAMS JACKSON, Ph.D., *Adjunct Professor of the English Language and Literature*

ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*

GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*

BRANDER MATTHEWS, A.M., LL.B., *Professor of Literature*

RICHARD JAMES HORATIO GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

HENRY ALFRED TODD, Ph.D., *Professor of Romance Philology*

GEORGE RICE CARPENTER, A.B., *Professor of Rhetoric and English Composition*

NOTE: For details as to other officers of instruction, see departmental statements.

GENERAL STATEMENT

The Faculty of Philosophy has charge of the university courses of instruction and research in philosophy, philology, and letters. Any duly matriculated university student is at liberty to combine courses of study and investigation under this faculty with courses offered by the University Faculties of Law, Medicine, Mines (Applied Science), Political Science, and Pure Science.

Students are received either as candidates for the degrees of Bachelor of Arts, Master of Arts, or Doctor of Philosophy, or to pursue special or partial courses. Some courses of lectures are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained. Auditors do not have and cannot receive any university recognition whatever.

Students enrolled either in the General, the Union, or the Jewish Theological Seminary, in the city of New York, who may be designated for the privilege by the authorities of those institutions, and accepted by the President of Columbia College, are admitted to the courses offered by the Faculty of Philosophy free of any charge for tuition.

Students enrolled in the Art Schools of the Metropolitan Museum of Art, who may be designated for the privilege by the authorities of those schools, and accepted by the President of Columbia College, are permitted to attend the courses of lectures on archæology and æsthetics free of any charge for tuition.

By the terms of an alliance between Columbia College and the Teachers College, 120th Street, Morningside Heights, duly qualified students of the Teachers College are permitted to enter the courses offered by the Faculty of Philosophy, either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia College.

ADMISSION AND ATTENDANCE

Students desiring to pursue their studies under the direction of the Faculty of Philosophy as candidates for a degree, must have completed the curriculum of some college in good standing at least to the close of the junior year. Certificates of graduation or dismission from institutions of learning in foreign countries are also accepted.

Candidates for the degree of Bachelor of Arts are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per week for one year, and must conform to such requirements regarding a graduation thesis as are established for members of the senior class in the School of

Arts. Their selection of studies is not confined to those in this Faculty. Students may pursue courses offered by the Faculty of Political Science or the Faculty of Pure Science, or the first-year course in the School of Law or the School of Medicine, and count the same as part of the requirement for the Bachelor's degree.

Candidates for the degrees of Master of Arts and Doctor of Philosophy must hold a Bachelor's degree from some college in good standing and remain in residence for not less than one and two years respectively. They are required to pursue courses of study or research in one major and two minor subjects, but are not held to any fixed number of hours of attendance per week.

Candidates for the degree of Doctor of Philosophy who have been in residence at other universities are given credit for the same.

Students who are not candidates for a degree are admitted to any courses which they are found competent to undertake.

There are no examinations for admission, either as candidates for a degree or as special students. Students are admitted at any time during the year, and may present themselves for examination for a degree whenever the requirements as to residence and an essay or dissertation have been complied with.

For fees see page 15.

COURSES OF STUDY AND RESEARCH

For the courses offered for 1894–95, see departmental statements, as below. For more detailed accounts of the courses and for the tender of 1895–96, application should be made for circular of the School of Philosophy.

Philosophy and Education, page 103
Experimental Psychology, page 105
Greek, page 68
Greek Archæology and Epigraphy, page 68
Latin (including Epigraphy, and Roman Archæology), Page 75
English, page 62
Literature, page 63
Germanic Languages, page 67
Romance Languages :
- **French, page 114**
- **Italian, page 116**
- **Spanish, page 116**
- **Provençal, page 117**
- **Portuguese and Rumanian, page 117**
- **Romance Philology, page 117**

Oriental Languages, page 95
- **Sanskrit, page 96**
- **Semitic Languages, page 96**
- **Iranian Languages, page 99**

Study of Language, page 100
- Courses at the Union Theological Seminary :

New Testament Greek, page 70
Semitic Languages, page 98

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Philosophy; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Ernest Hamlin Abbott	*Brooklyn, N. Y.*	(110 Columbia Heights)
Harvard University, A.B., 1893. *Philosophy.*		
Michael Alexander Agelasto	*Norfolk, Va.*	330 West 57th st.
Johns Hopkins University, A.B., 1891; Columbia College, A.M., 1893. Pure Science; *Philosophy.*		
William Rosenzweig Arnold	*New York City*	41 East 69th st.
Ohio Wesleyan University, A.B., 1892. Student in the Union Theological Seminary.		
Henry Watterson Bainton	*New York City*	41 East 69th st.
Columbia College, A.B., 1893. Student in the Union Theological Seminary. *Hebrew, Greek.*		
Albert Dorrance Baldwin	*Newark, N. J.*	(71 Pennsylvania ave.)
Rutgers College, A.B., 1892. *Philosophy.*		
Effie Banta	*Brooklyn, N. Y.*	(144 St. James pl.)
Wellesley College, A.B., 1891. Graduate student in Barnard College. *Philosophy.*		
Annie Leland Barber	*New York City*	715 Fifth ave.
Harvard University, A.B., Cert., 1889; Columbia College, A.M., 1891. Student in Collegiate Course for Women. *Sanskrit.*		
Alois Barta	*New York City*	50 East 70th st.
Gymnasium at Kolin, Bohemia, *testimonium maturitatis*, 1892. Student in the Union Theological Seminary. *Philosophy.*		
Ludwig Bernstein	*New York City*	300 East 77th st.
Gymnasium at Mitau, Russia, *testimonium maturitatis*, 1891. *Germanic Languages and Literatures, Gothic and Anglo-Saxon.*		
Samuel Henry Bishop	*Orange, N. J.*	
University of Vermont, A.B., 1886. *Philosophy, Education, Logic.*		
Elizabeth Morton Boyce	*New York City*	973 Park ave.
Columbia College, A.B., 1893. Student in Collegiate Course for Women. Political Science; *Latin.*		

NAME	RESIDENCE	CITY ADDRESS
Francis Burke Brandt	*New York City*	447 Lexington ave.
Harvard University, A.B., 1892. University Fellow in Philosophy, 1894–5. *Philosophy*, *Education*; Political Science.		
Francis Ezra Brewer	*Gilbertsville, N. Y.*	113 West 71st st.
Cornell University, A.B., 1892; University of Indiana, A.M., 1893. *Romance Languages*, *Latin*.		
John Jay Bridges	*Carrollton, Ky.*	41 East 69th st.
Hanover College, Ind., A.B., 1892. *Philosophy*, *Literature*.		
Oliver Hart Bronson	*Rye, N. Y.*	50 East 70th st.
Yale University, A.B., 1892. *Philosophy*.		
George Henry Broughton, Jr.	*New York City*	2 East 15th st.
Columbia College, A.B., 1894. *Romance Languages and Literatures*, *English*.		
Louise Sheffield Brownell	*New York City*	322 West 56th st.
Bryn Mawr College, A.B., 1893. Graduate student in Barnard College. *Greek*.		
Ralph Lionel Brydges	*Islip, N. Y.*	
University of Toronto, three years. *Philosophy*, *Linguistics*, *German*.		
Ella Fitz-Gerald Bryson	*New York City*	132 East 78th st.
Barnard College, A.B., 1894. Graduate student in Barnard College. *Greek*, *Latin*, *Archæology*.		
Henry Worthington Bull	*Irvington, N. Y.*	31 West 47th st.
Lawrenceville School; Columbia College, one year. *German*.		
Edmund Burke	*New York City*	156 East 48th st.
College of the City of New York, A.B., 1890. *Latin*, *Archæology*, *Greek*.		
Starr Cadwallader	*Utica, N. Y.*	41 East 69th st.
Hamilton College, A.B., 1893. *Philosophy*.		
John Felix Carlson	*Celburne, Kansas*	357 West 55th st.
University of Kansas, A.B., 1894. *Romance Languages*, *English*.		
Thurston Walker Challen	*West Orange, N. J.*	Chelsea sq.
Rutgers College, B.S., 1887; M.S., 1890. *Philosophy*.		
Louisa Sewall Cheever	*Worcester, Mass.*	328 Madison ave.
Smith College, A.B., 1890. Graduate student in Barnard College. *Latin*, *English*, *Greek*.		
Katharine More Cochran	*Oneida Castle, N. Y.*	Teachers College.
Vassar College, A.B., 1890. *Latin*.		
James Sloane Corkey	*New York City*	50 East 70th st.
Foyle College, Londonderry, Ireland, 1885–6; Magee College, Ireland, 1892–3. *Arabic*, *German*.		

NAME	RESIDENCE	CITY ADDRESS
Florence Haskell Corliss	*Englewood, N. J.*	343 Madison ave.
Smith College, B.S., 1893. Graduate student in Barnard College. *Philosophy.*		
Thomas Rich Croswell	*Farmington Falls, Me.*	851 Lexington ave.
Bowdoin College, A.B., 1891. *Education, Psychology*; Political Science.		
Malcolm McGregor Dana	*New York City*	55 West 27th st.
Amherst College, A.B., 1859; A.M., 1862. Middlebury College, D.D., *honoris causa* Political Science; *Psychology.*		
Frederic Hall Dewey	*Mexico, N. Y.*	175 East 71st st.
Columbia College, Ph.B., 1894. Mines; *Philosophy.*		
Jaroslav Dobias	*New York City*	50 East 70th st.
Gymnasium at Kolin, Bohemia, *testimonium maturitatis*, 1892. Student in the Union Theological Seminary. *Philosophy.*		
Charles Alfred Downer	*New York City*	21 East 130th st.
College of the City of New York, A.B., 1886. *Romance Languages, Latin.*		
Albert Frost Earnshaw	*Lowville, N. Y.*	41 East 69th st.
College of New Jersey, A.B., 1892. Student in the Union Theological Seminary. *Latin.*		
Ruth Emerson	*New York City*	81 Madison ave.
Bryn Mawr College, A.B., 1893. Graduate student in Barnard College. *Latin.*		
George Hooper Ferris	*Milwaukee, Wis.*	41 East 69th st.
Brown University, A.B., 1891; A.M., 1893. *Philosophy.*		
James Alexander Fairley	*Roseland, N. J.*	50 East 70th st.
Amherst College, A.B., 1838. Student in the Union Theological Seminary. *Philosophy.*		
Frederic Appleton Flichtner	*Englewood, N. J.*	
Amherst College, A.B., 1894. Political Science; *Philosophy.*		
Frederic Hoole Floy	*Elizabeth, N. J.*	254 West 55th st.
Wesleyan University, A.B., 1892. Medicine; *Psychology.*		
James Everett Frame	*Boston, Mass.*	700 Park ave.
Harvard University, A.B., 1891; A.M., 1892. Student in the Union Theological Seminary. *Semitic Languages.*		
Shepherd Ivory Franz	*Jersey City, N. J.*	(62 Cottage st.)
Columbia College, A.B., 1894. *Psychology, Education, Anthropology.*		
Mgrditch Simbad Gabriel	*New York City*	202 West 23d st.
Central Turkey College, A.B., 1881. Political Science; *Philosophy.*		
Sigismund Schultz Goldwater	*New York City*	2671 Third ave.
New York City Public Schools. *Philosophy.*		

NAME	RESIDENCE	CITY ADDRESS
Frederick Christopher Grant	*Plainfield, N. J.*	
Rutgers College, A.B., 1894. *Philosophy, Psychology, Greek.*		
Katherine Olivia Graves	*Brooklyn, N. Y.*	(278 MacDonough st.)
Smith College, B.L., 1894. Graduate student in Barnard College. *German, English.*		
Lucia Graeme Grieve	*New York City*	157 East 49th st.
Wellesley College, A.B., 1883; A.M., 1893. Graduate student in Barnard College. *Greek, Sanskrit, Semitic Languages.*		
Harold Griffing	*New York City*	729 Amsterdam ave.
Columbia College, A.B., 1890. *Research in Psychology.*		
Kenneth Sylvan Guthrie	*Philadelphia, Pa.*	Chelsea sq.
University of the South, A.B., 1891; Tulane University, Ph.D., 1893; Harvard University, 1893–4. *Philosophy.*		
Arthur Cleveland Hall	*New York City*	76th st. and East River
Trinity College, A.B., 1888; A.M., 1893. Johns Hopkins University, 1892–94. University Fellow in Sociology. Political Science; *German, Philosophy.*		
Henry Fritz Hamlin	*Easton, Pa.*	41 East 69th st.
Lafayette College, A.B., 1894. Student in the Union Theological Seminary. *Philosophy.*		
Frederic Berg Hartranft	*Hartford, Conn.*	128 East 54th st.
Friedrich Gymnasium, Breslau, 1884–6. *Italian, French.*		
Willett Nicoll Hawkins, Jr.	*New Brighton, S. I.*	175 Ninth ave.
Columbia College, A.B., 1893. *Philosophy.*		
Eugene May Heath	*Louisville, Ky.*	138 East 47th st.
University School, Petersburgh, Va. Political Science, Law; *Philosophy, English.*		
William Addison Hervey	*New York City*	223 West 45th st.
Columbia College, A.B., 1893; A.M., 1894. University Fellow in Germanic Languages, 1894–5. *Germanic Languages, Romance Languages, English.*		
Otto Theodore Hess	*New York City*	307 West 86th st.
Columbia College, A.B., 1894. *Philosophy*; Political Science.		
John Oxford Higgons	*New York City*	41 East 69th st.
New York Public Schools; Private Tuition. *Philosophy.*		
Romilly Francis Humphries	*New York City*	15 East 129th st.
Trinity College, A.B., 1892. *Philosophy.*		
James Abner Hunsicker	*Schwenksville, Pa.*	41 East 69th st.
Ursinus College, A.B., 1892. Student in the Union Theological Seminary. Political Science; *Hebrew.*		
Robert Lyon Jackson	*Minneapolis, Minn.*	700 Park ave.
University of Minnesota, B.S., 1894. Student in the Union Theological Seminary. *Philosophy.*		

NAME	RESIDENCE	CITY ADDRESS
Samuel Henry Jobe	*New York City*	175 Ninth ave.
Trinity College, A.B., 1893. *Philosophy.*		
Judah Joffe	*New York City*	166 Henry st.
Columbia College, A.B., 1893. University Fellow in Comparative Philology. *Classical Philology*, *Sanskrit*, *Iranian.*		
Daniel Jordan	*New York City*	20 East 127th st.
Lycée de Besançon, B. ès S., 1888; State Normal College, Albany, N. Y., Pd.B., 1893. *Romance Languages*, *Philosophy.*		
Byron Strathmore Johnson	*Norfolk, Va.*	41 East 69th st.
Lincoln University, Pa., A.B., 1893. Student in the Union Theological Seminary. *Philosophy.*		
Herbert McLeod Johnstone	*Plainfield, N. J.*	402 East 5th st.
Columbia College, A.B., 1894. University Fellow in Literature, 1894–5. *Literature*, *Philosophy*, *English.*		
Fred Brigham Kellogg	*Nashua, N. H.*	41 East 69th st.
Boston University, three years. Student in the Union Theological Seminary. *Philosophy.*		
George Alexander Kohut	*New York City*	160 East 72d st.
College of the City of New York, one term. *Semitic Languages*, *Iranian Languages*, *Philosophy*, *Literature*, *Germanic Languages*, *English*, *Rhetoric.*		
Asbury E. Kron	*Oxford, Ohio*	41 East 69th st.
Miami University, A.B., 1892. Student in the Union Theological Seminary. *Philosophy*, *Semitic Languages.*		
John Kasson Lathrop	*Cortland, N. Y.*	118 West 70th st.
Cornell University, A.B., 1894. Henry Drisler Fellow in Classical Philology, 1894–5. *Greek*, *Latin*, *Sanskrit.*		
Wilfrid Lay	*New Rochelle, N. Y.*	
Columbia College, A.B., 1893. University Fellow in Philosophy, 1894–5. *Philosophy*, *Psychology*, *Latin.*		
Medwin Leale	*New York City*	604 Madison ave.
Columbia College, A.B., 1894. Medicine; *Philosophy.*		
Frederick Ludlow Luqueer	*Brooklyn, N. Y.*	(907A Lafayette ave.)
Columbia College, A.B., 1894. University Fellow in Education, 1894–5. *Education*, *Psychology*; Political Science.		
John Alexander MacIntosh	*Halifax, N. S.*	41 East 69th st.
Dalhousie College, A.B., 1892. Student in the Union Theological Seminary. *Philosophy.*		
Leonard Beecher McWhood	*Newark, N. J.*	(136 Pennsylvania ave.)
Columbia College, A.B., 1893. *Psychology*, *Philosophy*, *Greek.*		
Albert John Maisels	*New York City*	50 East 70th st.
Gymnasium V, St. Petersburg, 1881–4. Student in the Union Theological Seminary. *Philosophy*, *Latin.*		

NAME	RESIDENCE	CITY ADDRESS

Sidney Stuyvesant Meyers — *New York City* — 110 East 92d st.
College of the City of New York, one and one-half years.
Literature.

Ernest Carroll Moore — *Youngstown, Ohio* — 50 East 70th st.
Ohio Normal University, A.B., 1892; LL.B., 1894.
Student in the Union Theological Seminary.
Philosophy, Greek, Hebrew.

Dubois Schanck Morris — *New York City* — 115 West 73d st.
College of New Jersey, A.B., 1893; Harvard University, 1893–4.
Political Science; *Anthropology.*

Lewis Freeman Mott — *New York City* — 17 Lexington ave.
College of the City of New York, B.S., 1883; M.S., 1886.
Romance Languages, Romance Philology, German.

Samuel Paul Mueller — *New York City* — 56 West 98th st.
Karl May Gymnasium, St. Petersburg, *testimonium maturitatis*, 1878; Universities of Dorpat and Berlin, five semesters.
University Fellow in Romance Philology, 1894–5.
Romance Languages, German.

Conrad Hjalmar Nordby — *New York City* — 30 West 132d st.
College of the City of New York, B.S., 1886.
Germanic Lanuages.

Pezavia O'Connell — *Newark, N. J.* — (145 Sheffield st.)
Gammon Theological Seminary, Atlanta, Ga., B.D., 1888.
Philosophy, Semitic Languages.

George N. Olcott — *Brooklyn, N. Y.* — (38 Grace Court)
Columbia College, A.B., 1893. University Fellow in Latin, 1894–5.
Latin, Greek, Greek Archæology and Epigraphy.

Max Osterberg — *New York City* — 232 East 62d st.
Columbia College, E.E., 1894.
Mines, Pure Science; *Education.*

Matthew Patton — *Philadelphia, Pa.* — 41 East 69th st.
University of Pennsylvania, A.B., 1892.
Student in the Union Theological Seminary.
Semitic Languages,

Edward Russell Perry — *New York City* — 74 West 94th st.
Lincoln University, Ill., A.B., 1891.
Philosophy, Ethics; Political Science.

Lydia Van Housen Potter — *Prattsburgh, N. Y.* — 343 Madison ave.
University of Michigan, A.B., 1880; Columbia College, A.M., 1890.
Graduate student in Barnard College.
English.

Nathaniel Miller Pratt — *Montpelier, Vt.* — 41 East 69th st.
University of Vermont, A.B., 1893. Student in the Union Theological Seminary.
Philosophy.

Vergil Prettyman — *Seaford, Del.* — Teachers College
Dickinson College, A.B., 1892.
Latin.

James Henry Rankine — *Minneapolis, Minn.* — 41 East 69th st.
University of Minnesota, 1892–3. Student in the Union Theological Seminary.
Philosophy.

NAME	RESIDENCE	CITY ADDRESS
David MacDonald Reoch	*Brooklyn, N. Y.*	(41 South 6th st.)
Brooklyn Public Schools; Paine's Business College. *Arabic, German.*		
James Bronson Reynolds	*New York City*	26 Delancey st.
Yale University, A.B., 1884; B.D., 1888. University Fellow in Sociology, 1894–5. Political Science; *Psychology.*		
Heinrich Ries	*New York City*	28 West 128th st.
Columbia College, Ph.B., 1892; A.M., 1894. University Fellow in Mineralogy, 1894–5. Pure Science; *Education.*		
John Lovett Rile, Jr.	*Brooklyn, N. Y.*	(821 Marcy ave.)
Columbia College, A.B., 1893. *Greek.*		
Isaac Woodbridge Riley	*New York City*	50 East 70th st.
Yale University, A.B., 1892. Student in the Union Theological Seminary. *Philosophy.*		
Cornelia Hephzibah Bulkley Rogers	*Bridgeport, Conn.*	343 Madison ave.
Wellesley College, A.B., 1883; Yale University, Ph.D., 1894. *Romance Languages.*		
August Rupp	*New York City*	439 East 87th st.
College of the City of New York, A.B., 1884. *Latin, Archæology, Greek.*		
Jules Loines Saint-Dizier	*Paris, France*	19 West 9th st.
Colorado School of Mines, E.M., 1894. Mines, Pure Science; *Spanish.*		
Joseph Hawkins Sanders	*Carrollton, Ky.*	41 East 69th st.
Hanover College, Ind., A.B., 1893. Student in the Union Theological Seminary. *Philosophy, Literature.*		
George Reese Satterlee	*New York City*	60 East 78th st.
Columbia College, A.B., 1894. Medicine; *Psychology.*		
Wilhelm Schiller	*New York City*	41 East 69th st.
Kolin Gymnasium, Bohemia, *testimonium maturitatis.* Student in the Union Theological Seminary. *Philosophy.*		
DeWitt James Seligman	*New York City*	328 West 58th st.
Columbia College, Ph.B., 1883; LL.B., 1884. Political Science; *Literature.*		
Charles Norman Shepard	*Bristol, Conn.*	Chelsea sq.
Trinity College, A.B., 1891; A.M. 1894. *Philosophy, Ethics*; Political Science.		
Dudley Daniel Sicher	*New York City*	54 East 65th st.
Sachs' Collegiate Institute. *German.*		
Orville Lincoln Sigafoos	*Easton, Pa.*	41 East 69th st.
Lafayette College, A.B., 1894. Student in the Union Theological Seminary. *Philosophy.*		
Herman Simpson	*New York City*	128 Allen st.
University of the City of New York, A.B., 1894. Political Science; *Anthropology.*		

NAME	RESIDENCE	CITY ADDRESS
Abram Richard Stern	*New York City*	55 West 50th st.
College of the City of New York, three years. *English, Literature.*		
George Ogden Thomas	*Topeka, Kansas*	61 West 54th st.
Williston Seminary, East Hampton, Mass., one year. Law; *Philosophy.*		
Maurice Thorner	*New York City*	324 East 21st st.
College of the City of New York, A.B. 1892. *Semitic Languages, German.*		
Henry Hallam Tweedy	*Binghamton, N. Y.*	50 East 70th st.
Yale University, A.B., 1891. Student in the Union Theological Seminary. *Philosophy.*		
Charles Auguste Valadier	*New York City*	130 East 64th st.
Columbia College, A.B., 1892. Medicine; *Psychology.*		
Henry Waller	*Lebanon, Kentucky*	High Bridge
Centre College, Ky., A.B., 1894. *Latin, Greek, German.*		
Ernest Louis Walz, Jr.	*Plainfield, N. J.*	50 East 70th st.
Leal's School, Plainfield. Student in the Union Theological Seminary. *Philosophy.*		
Thomas Rawson Warren	*Los Angeles, Cal.*	50 East 70th st.
Stanford University, A.B., 1894. Student in the Union Theological Seminary. *Education.*		
Henry Alexander Welker	*Red Hill, Pa.*	41 East 69th st.
Ursinus College, A.B., 1893. Student in the Union Theological Seminary. *Philosophy.*		
Frederick DeWitt Wells	*New York City*	Hotel Waldorf
Columbia College, A.B., 1894. *English Language and Literature:* Political Science.		
Francis Frederick West	*New York City*	50 East 70th st.
Greenwich College, England, one year. Student in the Union Theological Seminary. *Arabic, German.*		
Theodore Greely White	*New York City*	39 West 26th st.
Columbia College, Ph.B., 1894. Pure Science; *Education.*		
William Ellis Williams	*Minneapolis, Minn.*	41 East 69th st.
Lake Forest University, A.B., 1894. Student in the Union Theological Seminary. *Philosophy, Ethics, Semitic Languages.*		
Zaidee Williams	*Brooklyn, N. Y.*	(49 S. Oxford st.)
Columbia College (Collegiate Course for Women), A.B., 1892. Graduate student in Barnard College. *Latin, Romance Languages.*		
Stephen Seymour Wise	*New York City*	119 East 65th st.
Columbia College, A.B., 1892. *Philosophy.*		
David Hirsh Wittenberg	*New York City*	736 Lexington ave.
College of the City of New York, 1889–90. *Philosophy, Rhetoric.*		

NAME	RESIDENCE	CITY ADDRESS
Ellis Robert Woodruff	*New York City*	41 East 69th st.
Rutgers College, A.B., 1893. Student in the Union Theological Seminary. *Semitic Languages*, *Greek*.		
Asa Wynkoop	*South Orange, N. J.*	
Rutgers College, A.B., 1887. *Philosophy*.		
Abraham Yohannan	*New York City*	138 East 48th st.
Urmi College, Persia, A.B., 1870. *Semitic Languages*, *Iranian Languages*, *Sanskrit*.		
Oscar Woodward Zeigler	*Baltimore, Md.*	41 East 69th st.
Johns Hopkins University, A.B., 1890; Princeton College, A.M., 1894. Student in the Union Theological Seminary. *English*, *Education*.		
Otto Paul Zeitfuchs	*Morris Heights, N. Y.*	
Gymnasium at Zuellichau, *testimonium maturitatis*, 1888; University of Halle, 1889–91. *Greek*, *Latin*, *Hebrew*.		

Total.....120

STUDENTS IN THE SCHOOL OF ARTS PURSUING COURSES OF INSTRUCTION FOR THE DEGREE OF A.B. IN THE DEPARTMENTS SPECIFIED.

NAME	RESIDENCE	CITY ADDRESS
Claude Selwyn Beckwith	*Paterson, N. J.*	(232 Broadway)
English, *Romance Languages*.		
William L. Cahn	*New York City*	40 East 72d st.
Philosophy.		
Philetus Mortimer Capen	*New York City*	48 East 63d st.
English.		
Lewis Nathaniel Chase	*Riverside, Cal.*	142 West 44th st.
English, *Literature*, *Germanic Languages*, *Romance Languages*.		
Roger Louis Conant	*Newark, N. J.*	(21 Park pl.)
Greek, *Latin*, *English*, *Language*.		
Frederick Morse Cutler	*New York City*	2109 Madison ave.
Latin, *Literature*.		
Schuyler Emerson Day	*New York City*	13 West 63d st.
Philosophy.		
Henry William Egner, Jr.	*Newark, N. J.*	(1015 Broad st.)
English, *Germanic Languages*, *Language*.		
William Sanford Evans	*New York City*	4 East 33d st.
Philosophy.		
John Driscoll Fitzgerald II	*Newark, N. J.*	(57 Liberty st.)
Romance Languages, *Language*.		
Clarence Randolph Freeman	*New York City*	123 East 74th st.
English.		

NAME	RESIDENCE	CITY ADDRESS
William Oscar Gennert *Philosophy, English, Germanic Languages.*	*Greenville, N. J.*	24 & 26 East 13th st.
George Balthasar Germann *Philosophy.*	*Brooklyn, N. Y.*	(90 Norman ave.)
Henry Eugene Houston *Philosophy, Germanic Languages.*	*Richmond Hill, N. Y.*	
Victor William Hungerford *English.*	*New York City*	121 West 69th st.
Emil Alexander Charles Keppler *English.*	*New York City*	130 West 58th st.
Edward Lazansky *Germanic Languages.*	*Brooklyn, N. Y.*	(224 Carleton ave.)
George Frederick Middendorf, Jr. *Germanic Languages.*	*Brooklyn, N. Y.*	(90 Schenck ave.)
James Macdonald Mitchell *English, Literature.*	*Flushing, N. Y.*	74 Leonard st.
Charles Gustave Mourraille *English, Literature.*	*New York City*	74 West 12th st.
Rudolph Neeser *English, Literature, Germanic Languages.*	*New York City*	2 West 33d st.
Walter Stephen Newell *Philosophy, Greek, Latin, English, Literature, Germanic Languages.*	*New York City*	20 East 127th st.
Louis Hasbrouck Newkirk *English.*	*Monticello, N. Y.*	38 West 34th st.
Charles Walton Ogden, Jr. *Philosophy, English, Literature, Romance Languages.*	*New York City*	31 West 20th st.
Edward Codman Parish *English, Literature, Germanic Languages.*	*New York City*	1 West 19th st.
Frank Judson Pope *Philosophy, Literature.*	*Elizabeth, N. J.*	12 West 31st st.
James Naumburg Rosenberg *Philosophy, English, Literature.*	*New York City*	122 West 87th st.
Issak Max Rubino *Philosophy, Literature.*	*New York City*	24 East 106th st.
Raymond Gold Shipman *Philosophy.*	*New York City*	213 West 74th st.
Frederick Herbert Sill *Philosophy, Greek, English, Literature.*	*New York City*	243 West 45th st.
Joseph Percy Smyth, Jr. *Philosophy, Greek, English.*	*Brooklyn, N. Y.*	(851 President st.)
Joel Elias Spingarn *Philosophy, English, Literature.*	*New York City*	118 East 58th st.
Faneuil Dunkin Stein *Philosophy, English, Spanish.*	*New York City*	56 East 49th st.
Clarence Storm *Philosophy, English, Literature.*	*New York City*	41 West 81st st.

NAME	RESIDENCE	CITY ADDRESS
William Dana Street	*Brooklyn, N. Y.*	(173 Macon st.)
Philosophy, English, Germanic Languages, Semitic Languages.		
David Houghtaling Taylor	*New York City*	16 East 56th st.
English, Germanic Languages.		
John Alfred Valentine	*Newton, N. J.*	
English.		
Frederick Oakman Virgin	*New York City*	16 East 125th st.
Philosophy, English, Literature.		
Richmond Weed	*Flushing, N. Y.*	(30 Jamaica ave.)
Philosophy, English, Literature.		
Richard Weil	*New York City*	711 Madison ave.
Philosophy.		
James Perry Worden	*Hastings-on-Hudson, N. Y.*	
Greek, English, Literature, Germanic, Semitic.		

Total.....40

GRAND TOTAL ENROLLED UNDER THE UNIVERSITY FACULTY OF PHILOSOPHY..... 171

SUMMARY OF GRADUATE STUDENTS.

Columbia College.....	33
" " (Barnard).....	1
College of the City of New York.	7
Rutgers College.....	6
Trinity College.....	6
Yale University	6
Harvard University.....	5
Amherst College.....	4
Wellesley College.....	4
Bohemian Gymnasia.....	3
College of New Jersey.....	3
Russian Gymnasia.....	3
Smith College.....	3
Bryn Mawr College.....	2
Cornell University.....	2
Hanover College, Ind.....	2
Johns Hopkins University.....	2
Lafayette College.....	2
Ohio Normal University.....	2
University of Vermont.....	2
Ursinus College.....	2
Brown University.....	1
Central Turkey College.....	1
Centre College, Ky.....	1
University of the City of New York.....	1
Dalhousie College.....	1
Dickinson College.....	1
French Lycée.....	1
Gammon Theological Seminary..	1
German Gymnasia.....	1
Hamilton College.....	1
University of Indiana.....	1
University of Kansas.....	1
Lake Forest University.....	1
Lincoln University, Ia.....	1
Lincoln University, Pa.....	1
Miami University.....	1
University of Michigan.....	1
University of Minnesota.....	1
Ohio Wesleyan University.....	1
University of Pennsylvania.....	1
University of the South	1
Stanford University.....	1
State Normal College, N. Y.....	1
Tulane University.....	1
Urmi College, Persia.....	1
Vassar College.....	1
Total.....	126
Deduct for duplication...	14
Total.....	112

DEGREES HELD BY GRADUATE STUDENTS

Bachelor of Arts	87
Bachelor of Science	6
Bachelor of Philosophy	4
Bachelor of Literature	1
Bachelor of Pedagogy	1
Bachelor of Laws	2
Bachelor of Divinity	2
Testimonium Maturitatis	6
Electrical Engineer	1
Engineer of Mines	1
Master of Arts	14
Master of Science	2
Doctor of Philosophy	2
Doctor of Divinity	1
	130
Deduct for students holding more than one degree	18
	112
Students without degrees, other than seniors in the School of Arts	18
Seniors in the School of Arts	41
Total registration	171

SCHOOL OF PURE SCIENCE

The following departments are represented in the Faculty:

ANATOMY
ASTRONOMY
BACTERIOLOGY
BIOLOGY
BOTANY
CHEMISTRY
GEOLOGY
MATHEMATICS
MECHANICS
MINERALOGY AND METALLURGY
PHYSICS
PHYSIOLOGY

Officers of the Faculty

HENRY F. OSBORN, ScD. *Dean and ex-officio Member of the University Council*
NATHANIEL L. BRITTON, E.M., Ph.D. *Secretary*
JOHN K. REES, A.M., E.M. *Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*
OGDEN N. ROOD, A.M., *Professor of Physics*
THOMAS EGLESTON, E.M., Ph.D., LL.D., *Professor of Mineralogy and Metallurgy*
CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*
JOHN K. REES, A.M., E.M., *Professor of Astronomy, and Director of the Observatory*
JOHN G. CURTIS, A.M., M.D., *Professor of Physiology*
ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*
NATHANIEL L. BRITTON, E.M., Ph.D., *Professor of Botany*
GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*
HENRY FAIRFIELD OSBORN, Sc.D., *Da Costa Professor of Biology*
EDMUND B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*
JAMES F. KEMP, A.B., E.M., *Professor of Geology*
WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*
MICHAEL I. PUPIN, Ph.D., *Adjunct Professor of Mechanics*
T. MITCHELL PRUDDEN, M.D., *Professor of Pathology*
ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*
THOMAS S. FISKE, A.M., Ph.D., *Adjunct Professor of Mathematics*
HAROLD JACOBY, A.B., *Adjunct Professor of Astronomy*

NOTE: For details as to other officers of instruction, see departmental statements.

GENERAL STATEMENT

This Faculty has charge of the University courses of instruction and research in all the branches of Pure Science, and especially the supervision of candidates for the degrees of Master of Arts or Doctor of Philosophy in Pure Science. Students in the other University Faculties are at liberty to combine courses of study and investigation under this Faculty.

Students taking their major subject in Pure Science will be regarded as under the special supervision of this Faculty, while special students taking one or both minor subjects must also register with the Secretary.

Students of this and other colleges whose requirements conform to the regulations of the School of Arts may be admitted to the senior courses under this Faculty as candidates for the degree of A.B. They must present testimonials from some other institution maintaining an equivalent course of study, to the close of the junior year, or must pass a satisfactory examination upon the studies of the first three years of the School of Arts. Candidates for this degree are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per week for one year, and must conform to such requirements regarding a thesis as are established for members of the senior class in the School or Arts. Their selection of studies is not confined to those in this Faculty.

EXAMINATION

Applications to be examined for the degree of Master of Arts or Doctor of Philosophy must be made on or before April 1st of the academic year in which the examination is desired. The examination shall be oral, at least in part, and in the case of candidates for the degree of Doctor of Philosophy the dissertation must be publicly defended in the presence of the Faculty or of so many of the members as may desire to attend. The instructors in charge of the major and minor subjects must be present and conduct the examination.

RECORD.—At the close of each course the instructor in charge shall enter in the registration book the record of the student, and at the close of each academic year each student shall exhibit his registration book to the Dean or Secretary for record.

TIME.—At least one year's study is required for the degree of Master of Arts, and from two to three years' study for the degree of Doctor of Philosophy.

SPECIAL STUDENTS

Students who are not candidates for a degree shall be permitted to pursue such courses from among those offered by this Faculty as they may be found qualified to enter upon and as the Dean may approve. In the case of students who have been previously registered under another Faculty the applicant shall present the approval in writing of the Dean of that Faculty.

Qualifications of such students shall be passed upon by the instructors in charge of the courses selected by them. The standard will conform in general to that required of candidates for degrees.

All applications to pursue courses of study either wholly or in part under the direction of this Faculty shall be made in writing to the Dean, on blank forms prepared for the purpose.

COURSES OF STUDY

For the courses offered for 1894–95 see departmental statements, as below. For more detailed account of the courses and for the tender of 1895–96 application should be made for circular of the School of Pure Science.

Mathematics, page 80
Mechanics, page 82
Astronomy, page 34
Physics, page 107
Chemistry, page 41
Mineralogy, page 85
Geology, page 65
Biology, page 35
Botany, page 38
Physiology, page 110
Anatomy, page 29
Bacteriology, page 102

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Pure Science; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Michael Alexander Agelasto	*Norfolk, Va.*	330 West 57th st.
Johns Hopkins University, A.B., 1891; Columbia College, A.M., 1893. *Mechanics;* Philosophy.		
Herman S. Davis	*Milford, Del.*	
College of New Jersey, A.B., 1892. *Astronomy, Physics.*		
Harrison G. Dyar	*New York City*	76 West 69th st.
Massachusetts Institute of Technology, B.S., 1889; Columbia College, A.M., 1894. *Bacteriology, Biology, Botany.*		
Samuel Friedwald	*New York City*	122 East Broadway
College of the City of New York, A.B., 1891. *Mathematics, Mechanics, Astronomy.*		
Bradley Beverly Griffin	*New York City*	2058 Vanderbilt ave.
College of the City of New York, B.S., 1894. *Biology, Botany, Geology.*		
Harold Griffing	*White Plains, N. Y.*	
Columbia College, A.B., 1890. Philosophy; *Biology.*		
Adolph A. Himowich	*New York City*	236 Henry st.
University of the City of New York, B.S., M.S., M.D. *Mechanics, Mathematics.*		
Jean Kirk Howell		343 Madison ave.
Cornell University, Ph.B., 1889; M.S., 1890. Graduate Student in Barnard College. *Botany, Biology, Chemistry.*		
George William Kosmak	*New York City*	23 East 93d st.
Columbia College, A.B., 1894. *Biology, Physiology, Botany.*		
Henrietta Lake	*New York City*	8 East 46th st.
St. Lawrence University, B.S., 1886. Graduate Student in Barnard College. *Botany, Biology, Chemistry.*		
Leffert Lefferts	*Flatbush, N. Y.*	
Columbia College, A.B., 1893. *Chemistry, Physics.*		

NAME	RESIDENCE	CITY ADDRESS
George Herbert Ling	*New York City*	595 Lexington ave.
University of Toronto, A.B., 1893; Columbia College, A.M., 1894. *Mathematics*, *Mechanics*, *Astronomy*.		
Albert Prescott Mathews	*New York City*	130 West 67th st.
Massachusetts Institute of Technology, B.S., 1891. *Biology*, *Bacteriology*, *Physiology*.		
John A. Mathews	*Washington, Pa.*	251 West 54th st.
Washington and Jefferson College, B.S., 1893. *Chemistry*, *Geology*; Political Science.		
William Diller Matthew	*St. John, N. B.*	336 West 35th st.
University of New Brunswick, A.B., 1889. Columbia College, Ph.B., 1893; A.M., 1894. *Geology*, *Mineralogy*.		
Robert Andrews Millikan	*Oberlin, O.*	681 Lexington ave.
Oberlin College, A.B., 1891; A.M., 1893. *Physics*, *Mechanics*.		
Charles Percy O'Connor	*Brooklyn, N. Y.*	(149 Clinton st.)
Polytechnic Institute, B.S. *Chemistry*, *Geology*; Philosophy.		
Max Osterberg	*New York City*	232 East 62d st.
Columbia College, E.E., 1894. *Mechanics*, *Mathematics*; Philosophy.		
Agnes Lillie Pearson	*Mount Vernon, N. Y.*	(11 S. 11th ave.)
Cornell University, B.S., 1890. Graduate Student in Barnard College. *Botany*, *Chemistry*, *Physics*.		
Anna Stockton Pettit	*Lawrence Station, N. Y.*	343 Madison ave.
St. Lawrence University, B.S., 1888. Graduate Student in Barnard College. *Botany*, *Chemistry*, *Biology*.		
Heinrich Ries	*New York City*	28 West 128th st.
Columbia College, Ph.B., 1892; A.M., 1894. *Mineralogy*, *Chemistry*; Philosophy.		
Charles T. Rittenhouse	*New York City*	247 West 138th st.
Stevens Institute of Technology, M.E., 1893. *Mechanics*, *Mathematics*, *Physics*.		
E. Podryabinick Robinson	*New York City*	314 Henry st.
University of the City of New York, B.S., 1893. *Chemistry*, *Mechanics*; Philosophy.		
William Salant	*New York City*	440 East 35th st.
Cornell University, B.S. *Biology*, *Botany*, *Physiology*.		
Albert Schneider	*New York City*	408 West 51st st.
College of Physicians and Surgeons, Chicago, M.D.; University of Illinois, B.S.; University of Minnesota, M.S. *Botany*, *Bacteriology*; Philosophy.		
John Kunkel Small	*New York City*	496 Lexington ave.
Franklin and Marshall College, A.B., 1892. *Botany*.		
Effie Almira Southworth		343 Madison ave.
University of Michigan, B.S., 1885. Graduate Student in Barnard College. *Botany*, *Biology*, *Chemistry*.		

NAME	RESIDENCE	CITY ADDRESS
Oliver S. Strong	*Montclair, N. J.*	
College of New Jersey, A.B., 1891; Columbia College, A.M., 1892.		
Biology, Botany, Chemistry.		
Ansel Augustus Taylor	*Easton, Pa.*	655 Lexington ave.
Lafayette College, A.B., 1892.		
Botany, Biology, Geology.		
Theodore Greely White	*New York City*	38 West 26th st.
Columbia College, Ph.B., 1894.		
Geology, Botany; Philosophy.		
David Reid Williams	*Wilmington, N. C.*	The Alpine, 6th ave. cor. 33d st.
Davidson College, B.S.		
Chemistry, Mineralogy, Geology.		

Total.....31

SENIORS FROM THE SCHOOL OF ARTS

Frederick Coykendall	*Rondout, N. Y.*	128 West 44th st.
Mathematics, Physics.		
Henry William Egner, Jr.	*Newark, N. J.*	(1015 Broad st.)
Geology.		
George Balthaser Germann,	*Brooklyn N. Y.*	(90 Norman ave.)
Biology, Mechanics, Mathematics.		
Henry Eugene Houston	*Richmond Hill, N. Y.*	47 Broadway
Physics.		
Rudolph Neeser	*New York City*	2 West 33d st.
Astronomy.		
Charles Walton Ogden, Jr.	*New York City*	31 West 20th st.
Botany.		
William Howe Ripley	*New York City*	105 Lexington ave.
Chemistry, Physics, Mathematics.		
Isaak Max Rubino	*New York City*	24 East 106th st.
Botany, Biology, Astronomy, Mechanics, Physiology.		
Frederic White Shepard	*Brooklyn, N. Y.*	(81 Columbia Heights)
Mechanics.		
Joseph Percy Smyth, Jr.	*Brooklyn, N. Y.*	(851 President st.)
Botany.		
Joel Elias Spingarn	*New York City*	118 East 58th st.
Physics, Botany, Biology.		
Clarence Storm	*New York City*	41 West 81st st.
Botany.		
Joseph Suydam Stout, Jr.	*New York City*	35 East 67th st.
Chemistry, Physics, Mathematics.		
Frederic Oakland Virgin	*New York City*	16 East 125th st.
Biology, Physics.		

Total..... 14

STUDENTS FROM THE COLLEGE OF PHYSICIANS AND SURGEONS

Ernest Valentine Hubbard	*New York City*	138 West 74th st.
Columbia College, A.B., 1894.		
Biology.		

NAME	RESIDENCE	CITY ADDRESS
S. R. Lawrence	*New York City*	120 West 57th st.
Leland Stanford Junior University, A.B., 1892. *Biology.*		
George French Little	*New York City*	118 West 61st st.
Columbia College, A.B., 1888. *Physiology.*		

Total.....3

STUDENTS FROM THE SCHOOL OF MINES

William Claflin Andrews	*Brooklyn, N. Y.*	(143 Montague st.)
Mechanics.		
Victor Mayor Benedikt	*New York City*	123 East 83d st.
College of the City of New York, B.S., 1892. *Mechanics.*		
Joshua Binion	*New York City*	215 East Broadway
College of the City of New York, B.S., 1891. *Mathematics.*		
Ira Nash Evans	*Brooklyn, N. Y.*	(755 Quincy st.)
Mechanics.		
Ernest Auguste von Fintel	*New York City*	105 East 90th st.
College of the City of New York, B.S., 1892. *Mechanics.*		
George Wesley Fletcher	*Brooklyn, N. Y.*	(38 Grove st.)
Mechanics.		
Charles Gartensteig	*New York City*	215 East 71st st.
College of the City of New York, B.S., 1891. *Mechanics.*		
Leon Moisseiff	*Brooklyn, N. Y.*	(898 Park ave.)
Mechanics.		
Isaac Natkins	*New York City*	418 West 40th st.
College of the City of New York, B.S., 1892. *Mechanics.*		

Total.....9

SPECIAL STUDENTS

Abram E. Anderson	*Elizabeth, N. J.*	(643 Jefferson ave.)
Biology, Botany.		
Samuel Fessenden Clarke	*Williamstown, Mass.*	325 West 82d st.
Yale College, Ph.B., 1873; Williams College, A.M.; Johns Hopkins, Ph.D., 1879. *Biology.*		
Frank Dunlap Gamewell	*Hackensack, N. J.*	
Chemistry, Physics.		
Walter Suffern Gurnee, 3d	*New York City*	35 West 58th st.
Physics.		
Alexander Livingston Kean	*Elizabeth, N. J.*	
Biology.		
Phœbus Aaron Levene	*New York City*	164 East 80th st.
St. Petersburg, Russia, Medical Academy, M.D., 1891. *Chemistry.*		

NAME	RESIDENCE	CITY ADDRESS
George Valentine Nash *Botany, Geology.*	*New York City*	119 East 90th st.
Abraham Bernard Samuelson University of the City of New York, B.S., 1890; C.E., 1891. *Astronomy.*	*New York City*	305 Henry st.
Frank Schlesinger College of the City of New York, B.S., 1890. *Astronomy.*	*New York City*	2622 Third ave.

Total..... 9

SUMMARY

Graduates	31
Seniors from the School of Arts	14
Students from the College of Physicians and Surgeons	3
Students from the School of Mines	9
Special Students	9
Total	66

Publications of the University

Columbia University Press

In 1893 the Trustees authorized the formation of a corporation to be known as the Columbia University Press, to which they granted the use of that name subject to revocation, in case of need, at the option of the Trustees. Its object is to provide for the printing and publication of meritorious works on all subjects. The President of Columbia College is its president. Messrs. Macmillan & Co. are its publishing agents.

University Bulletin

The University Bulletin is issued by the authority of the Trustees of Columbia College. Its purpose is to give a summary of important university and faculty legislation, to record the scientific and literary work of the officers of Columbia College, to furnish information with regard to original investigations that are in progress, to indicate the subjects that occupy the attention of the advanced seminaria, and to give other general information that may be either of immediate interest to inquirers or of permanent value as a matter of record. The Bulletin will appear at intervals of about two months during the college year, and until further notice will be sent free of charge to such alumni of the College as may signify their desire to receive it.

All communications relating to the Bulletin should be addressed to Prof. George R. Carpenter, chairman.

Serial Studies and Contributions Issued from the College

Studies in History, Economics, and Public Law.
Studies from the Analytical and Assay Laboratories of the School of Mines.
Contributions from the Electrical Engineering Department of the School of Mines.
Contributions from the Herbarium of Columbia College.
Contributions from the Mineralogical Department of Columbia College.
Contributions from the Geological Department of Columbia College.
Contributions from the Observatory of Columbia College.
Contributions to Philosophy, Psychology, and Education.
Studies from the Biological Department of Columbia College.
Studies from the Department of Pathology, College of Physicians and Surgeons, Columbia College.
Memoirs from the Department of Botany of Columbia College.

The following journals are issued under the direction of members of the faculties of Columbia College, or in co-operation with members of other colleges :

The School of Mines Quarterly.
The Political Science Quarterly.
Bulletin of the Torrey Botanical Club.
Bulletin of the New York Mathematical Society.

Educational Review.	(In co-operation).
Modern Language Notes.	" "
American Journal of Archæology.	" "
Psychological Review.	" "

The Graduate Club

The Graduate Club of Columbia College was organized November, 1893. Its purpose is primarily to bring together the graduate students of the university in a manner best calculated to encourage the growth of the good fellowship and mutual interest which ought to prevail among students who are so affiliated.

All members of the university possessing an academic degree or equivalent and pursuing courses in any of the professional or technical schools are eligible for membership.

Degrees Conferred in 1894

Bachelor of Arts

1. David D. Ackerman
2. Paul Armitage
3. Lawrence Atterbury
4. William Hayden Baker
5. John Philip Benkard
6. James Fuller Berry
7. Francis Hill Bowman
8. Charles Joseph Breck, Jr.
9. George Henry Broughton, Jr.
10. Francis Tillon Buck
11. Russell Ely Burke
12. Spencer Carleton
13. George Stanislaus Connell
14. Harold Coburn Cook
15. Howard Martin Cook
16. Walter Wheeler Cook
17. Eugene Howell Daly
18. Alexander White Doolittle
19. Horace Dowie
20. Harold Sharpe Emerson
21. Shepherd Ivory Franz
22. Joseph Peter Grace
23. Otto Theodore Hess
24. Philip Redington Mudge Hildreth
25. James Cox Howell
26. Ernest Valentine Hubbard
27. David Stewart Iglehart
28. Meir Jaffa
29. Herbert McLeod Johnstone
30. Shepherd Knapp, Jr.
31. Horatio Sheafe Krans
32. Medwin Leale
33. Prescott Le Breton
34. Walter Henry Liebmann
35. Campbell Erie Locke
36. Frederic Ludlow Luqueer
37. William Jeremiah Millard
38. Frederick Felix Neuman
39. George Mitchell Parker
40. Warren Waverly Phelan
41. Albert Capron Phillips
42. Theodore Irving Reese
43. Winfred Chesney Rhoades
44. Harry Pelham Robbins
45. Milton Stanley Roth
46. Edward Sandford
47. George Reese Satterlee
48. Oscar Roland Seitz
49. Harry Judson Shaw
50. William West Shaw
51. John Dempster Sherman, Jr.
52. Henry Merwin Shrady
53. Clarence Bishop Smith
54. Charles R. Swords
55. Guy Hanford Turrell
56. Henry Ayres Uterhart
57. George John Wardenburg
58. Edwin Dunning Weed
59. Frederic DeWitt Wells
60. Arthur Donald Williams
61. Louis William Wormser
62. Frederick Amaziah Wright

From Barnard College

1. Evangeline Rollinson Bridgart
2. Ella Fitz-Gerald Bryson
3. Helen Brigham Crocker
4. Estella Demarest
5. Agnes Irwin
6. Eliza Jane Jones
7. Laura Landau

Bachelor of Laws

1. Edwin Galloway Adams
2. Nestor A. Alexander
3. DeWitt Bailey, A.B., A.M.
4. David Bandler, A.B.
5. Robert Chetwood Beatty
6. Cortlandt Field Bishop, A.M., Ph.D.
7. Malcolm John Cameron, A.B.
8. William Carl, A.B., A.M.
9. Thomas Ayres Church, A.B.
10. Harry Jansen Crawford
11. Frank Ayer Dillingham, A.B.
12. Charles Nelson Dohs
13. Edward Darwin Edson, B.S.
14. Alex. L. Figge
15. Herschel Luther Gardner, A.B.
16. Edward L. Godfrey, A.B.
17. George Tarleton Goldthwaite, A.B.
18. Lawrence George Goodhart
19. Alexander Browne Halliday, A.B.
20. Theodore Hansen, A.B.
21. Eugene H. Healey, A.B.
22. Reuben A. Heller
23. Herman A. Heydt, Ph.B.
24. John Sprunt Hill, Ph.B.
25. Christian Glaser Hüpfel
26. Benjamin J. Jarrett
27. Sherman Skinner Jewett, 2d, A.B.
28. Dudley Kinsell
29. C. Frank Kireker, Jr.
30. Benjamin F. Kraft
31. Richard Krause
32. Joseph Larocque, Jr., A.M.
33. Harry Learned
34. James Parrish Lee, A.B.
35. John Baldwin McGrew
36. Charles Capron Marsh, A.B.
37. Frederick Wallace Mattocks
38. S. Stanwood Menken, B.L.
39. Edward Calvin Moën, A.B.
40. George King Morrison, A.B.
41. Frederick W. Mount
42. Thomas E. Munday
43. Hart Momsen
44. Henry Necarsulmer, B.S., A.M.
45. Henry James Nichols, A.B.
46. George P. Norton
47. Benjamin Oppenheim
48. Louis Oppenheim
49. James Alfred Parker, A.B.
50. Terry Parker
51. Edward T. Paul
52. Waldron Kintzing Post, A.B.
53. Edward Ormonde Power
54. Edward Stephen Rawson, A.B.
55. Benjamin Reass
56. Harry Raymond Richards
57. Allan Gold Robinson, A.B.
58. Alfred L. Ross
59. Harold Eldredge Spencer
60. Solomon Marcus Stroock, B.S.
61. Henry Richmond Taylor, A.B.
62. Robert Van Iderstine
63. Harold Garrison Villard, A.B.
64. William Bell Wait, Jr.
65. John Metcalfe Ward
66. Muir Weissinger
67. Henry Wendt
68. Grenville Bayard Winthrop, A.M.

Master of Laws

Ralph Wesley Hyatt, LL.B.

Doctor of Medicine

1. Isador Abrahamson
2. John Frank Waite Allen
3. Maxwell H. Allen
4. Alfred James Andrews
5. Samuel Harbourne Baldwin, A.B.
6. Samuel Willis Bandler, A.B.
7. Charles Bartow, A.B.
8. Harry Leach Bender
9. Albert Ashton Berg, A.B.
10. Frederick Bleil, A.B.
11. Martin Laurence Bodkin
12. William Lincoln Bosserman
13. Franklin Fleetwood Bowyer
14. James Van Wagner Boyd
15. Harry Merritt Bradley, B.S.
16. Arthur Richard Braunlich, Ph.G.
17. Augustus Homer Brown, A.M.
18. Edward Wells Brown
19. Joseph Douglas Brown, Ph.B.
20. Barton Wilbur Brush
21. Clarence Whitfield Buckmaster
22. William Edward Buist
23. Charles Vincent Burke
24. Edward Michael Burns, B.S.
25. Edward Ward Burns
26. John Andrew Calnane
27. Edwin Crosby Chamberlin
28. Marcus Lerane Clawson
29. Seth Cook Comstock
30. Samuel James Craig
31. Frank Elihu Crosier, A.B.
32. Nicholas Robert Dann, A.B.
33. Henderson Brooke Deady
34. Edward Francis Denner, A.M.
35. William Lowther DesPortes
36. John Milton Dexter
37. Joseph Aloysius Dillon, B.S.
38. Moses Duckman
39. William Wilcox Dunn
40. George Thomas Dutcher
41. Edwin Bronson Finch, A.B.
42. William Young Finch
43. Parnell Ellis Fisher, A.B.
44. Paul Fitz-Gerald, A.B.
45. Clyde Sinclair Ford, B.S.
46. Eugene Herbert Fried
47. Howard Lawrance Gill
48. Henry Robert Gledhill, A.B.
49. James Patrick Glynn, A.M.
50. Henry Simpson Goddard
51. Charles Howard Goodrich
52. Howard Jerome Goodrich
53. William Munson Goodwin
54. Ernest Herman Carl Graeb
55. Dupree Meriweather Hall, A.B.
56. David Joseph Hamburg, B.S.
57. Hugh Macdougal Hart
58. Eugene Howe Hartnett, B.S.
59. James Foster Hasbrouck
60. Edwin Pelton Hayward
61. George Philip Heard, A.B.
62. Joseph Henschel, A.B.
63. John Augustus Hill, Jr.
64. Edward Franklin Horr, A.B.
65. Hampton Pierson Howell, A.B.
66. Carl Adolph Huber
67. Clarence Edward Ide
68. Frederick William James
69. Schuyler Clinton Jaques
70. Seymour Tilford Jarecki
71. David Stuart Dodge Jessup, A.B.
72. Philip Edwards Johnson, A.B.
73. Joseph Chaim Josephson, A.B.
74. Frederick Conrad Keller
75. William Valliant Kellogg, M.D.
76. Edward Cumberland Kershner, A.B.
77. Edward Stephen Kiley, A.B.
78. Ephraim Daniels Klotz
79. Geza Kremer
80. Joseph Allen Kyle, B.S.Ag.
81. Linnaeus Edford La Fetra, A.B.
82. Willlam Watson Laing
83. George Ludwig Laporte, Jr.
84. John Henry Larkin, A.B.
85. Thomas Sim Lee, A.B.
86. Frederick William Lester
87. John Oscar Lewright, M.D.
88. Reginald Joseph Moss Lewis
89. Emmanuel Libman, A.B.

90. William Popper Loth
91. George Davis Lowry, A.B.
92. William Henry Luckett
93. Arthur Lee Macken
94. Albert David Mayer
95. George Eldredge McClellan, Ph.B.
96. John Butler McCook, B.S.
97. Joseph Mac McMillan
98. George Mord
99. Elwood Stokes Morton
100. Joseph Paul Murphy, B.S.
101. Francis James Murray
102. Thomas Francis Mylod
103. Nathaniel Read Norton, Ph.B.
104. Frank Richard Oastler, A.B.
105. Charles Henry Francis O'Neil, A.B.
106. Albert Oppenheim
107. John Joseph O'Sullivan, A.B.
108. Gist Palmer, B.S.
109. Henry Russell Pemberton, A.M., B.S.
110. James Jones Philips, A.B.
111. Joseph Egbert Pollard
112. Daniel Warren Poor, Jr., A.B.
113. Otto Emil Prellwitz, A.B.
114. Paul Peter Prendergast
115. John Henry Reb
116. Jacob Monroe Rich, E.M., C.E.
117. Michael Placzek Rich
118. George Johnson Rittenhouse
119. William Homan Roe
120. Robert Hastings Rogers
121. Eugene Boutelle Sanger, Ph.B.
122. William Charles Schoenijahn
123. Heyward Scudder, A.B.
124. Ludwig Silverman Simon, Ph.B.
125. Alfred Keene Smith, Ph.G.
126. John Bentley Squier, Jr,
127. William Steinach, A.B.
128. Solomon Steiner
129. Moses Ashby Stivers
130. Casper Stock, B.S.
131. George Burnside Story, M.D.
132. John Francis Sullivan, A.B.
133. Albert Earl Sumner, A.B.
134. Martin John Synnott
135. Stephen Livingston Taylor, A.B.
136. William Gilbert Terwilliger
137. William Henry Theban, A.B.
138. Carl Theobald, B.S.
139. Samuel Wood Thurber, B.S.
140. Charles Henry Trowbridge
141. Herman Gustave Wahlig
142. Freeman Ford Ward
143. James Thomas Watkins, Jr.
144. William Edmund Weber, A.B.
145. Horace J. Whitacre, B.S.
146. Wallace White
147. Augustus Aloysius Wolff
148. Francis Carter Wood, B.S.
149. George Hermann Wright, A.B.
150. Charles Bellamy Young

Engineer of Mines

1. Paul Fuentes
2. Frank Chandler Hamilton, A.M.
3. Harris Kennedy Masters
4. Edward Danforth Self, Mech. Eng.
5. William Young Westervelt

Civil Engineer

1. Adolph Black
2. Francis Albertson Cokefair
3. Edward Pell Folger
4. David Joy Greene
5. Edward Francis Haas, B.S.
6. Richard Cochran Hanson
7. Meyer Joffe
8. Edward Marwedel Jones
9. Edward William Libaire
10. Edwin Henry Messiter
11. Harold Ashton Parsons
12. George Perrine
13. Juan Miguel Portuando
14. Charles Depew Searle
15. Gerald Fitzgerald Sherman
16. Wilson Fitch Smith
17. William Dunham Vanderbilt

Electrical Engineer

1. Aron Wright Chapman, A.B.
2. Leroy Clark, Jr.
3. Harry Dubois Frisbee
4. George Kemp Mears
5. Mariano Luis Mora, C.E.
6. Milbourne Munroe
7. Max Osterberg
8. John Lloyd Prince
9. John Clifford Rennard, A.B.
10. Charles Tomlinson Rittenhouse, Mech. Eng.
11. Alexander Stratton, B.S.
12. Lewis Herbert Vail

Bachelor of Philosophy

(Course of Geology and Palæontology)

Theodore Greely White

Bachelor of Philosophy

(Course of Analytical and Applied Chemistry)

1. Marston Taylor Bogert, A.B.
2. Thomas Lonsdale Leeming, Jr.
3. Rudolph Seldner
4. George Francis Tennille
5. Henry Vincent Walker

Bachelor of Philosophy

(Course of Architecture)

1. Joseph Bartlett Acken
2. Henry George Emery
3. William Kinne Fellows
4. Harry Allan Jacobs
5. Julius Charles Kastner
6. Charles Ransom McNeil
7. Benjamin Wistar Morris, Jr.
8. Kenneth Mackenzie Murchison, Jr.
9. John Russell Pope
10. Joseph Lauferty Steinam
11. William Noyes Taintor
12. John Almy Tompkins, 2d
13. Jules Joseph Vatable
14. Franklin Backus Ware

Master of Arts

1. Robert Archibald Ashworth, A.B.
2. George Hume Batchelor, A.B.
3. Ludwig Bernstein
4. Solomon Charles Bernstein, B.S.
5. Joseph Edmond Bullen, A.B.
6. Malcolm John Cameron, A.B.
7. Olof Zacharias Cervin, B.S.
8. Charles Ernest Chadsey, A.B., A.M.
9. Alfred Arthur Cook, B.S.
10. James Walton Cooper, A.B.
11. Harry Alonzo Cushing, A.B.
12. Herman Stearns Davis, A.B.
13. Harrison Gray Dyar, B.S.
14. Christopher Robert Hamlin, A.B.
15. Emanuel Hertz, A.B.
16. William Addison Hervey, A.B.
17. Arthur Knox, A.B.
18. George Herbert Ling, A.B.
19. William Diller Matthew, A.B., Ph.B.
20. S. Stanwood Menken, B.L.
21. Nathan Ottinger, B.S.
22. Anna Stockton Pettit, B.S.
23. Charles Louis Pollard, A.B.
24. Edward Stephen Rawson, A.B.
25. Raymond Reubenstein, A.B.
26. Heinrich Ries, Ph.B.
27. Emma Goodeve Sebring, A.B.
28. William Robert Shepherd, A.B.
29. Robert William Thompson, Jr., A.B.
30. Sidney Hubbell Treat, A.B.
31. Lemuel Whitaker, A.B., *speciali gratia*
32. Joseph Center Wight, A.B.

Doctor of Philosophy

1. Charles Sears Baldwin, A.M.
2. Frederic Rene Coudert, Jr., A.M.
3. William Julius Eckoff, Pd.D.
4. Edward Bonaparte Gosling, E.M.
5. Joseph Herman Hertz, A.B.
6. William Dodge Horne, Ph.B.
7. Harwood Huntington, A.B.
8. Lea McIlvaine Luquer, C.E.
9. Parker Cairns McIlhiney, Ph.B. A.M.
10. Charles Francis McKenna, Ph.B.
11. James Alexander McLean, A.B., A.M.
12. Edmund Howd Miller, Ph.B., A.M.
13. Lucius Pitkin, Ph.B.
14. James Dennison Rogers, A.M.
15. Frank Vanderpoel, E.M.
16. Norman Wilde, A.M.
17. Frederick Augustus Wood, A.B.

HONORARY DEGREES

Doctor of Laws

GEORGE WILLIAM HILL, Sc.D. (Cantab.)
Mathematician; Associate Royal Ast. Society, London; Member of National Academy of Sciences

EMILE HENRY LACOMBE, Class of 1863
Jurist; Judge U. S. Circuit Court for the Second Circuit

NIKOLA TESLA
Electrician

Master of Arts

LANDON CARTER GRAY, M.D.
Formerly of the Class of 1869

Bachelor of Arts

JOHN HONE, Jr.
Formerly of the Class of 1865

Fellows

University Fellows

* Marston Taylor Bogert, A.B., Columbia College, 1890.	Subject, Chemistry
Francis Burke Brandt, A.B., Harvard University, 1892.	" Philosophy
Lester Gladstone Bugbee, B.L., University of Texas, 1892; A.M., 1893.	" History
James Walter Crook. A.B., Oberlin College, 1891.	" Economics
John Franklin Crowell, A.B., Yale University, 1883.	" Sociology

* Resigned May 15, 1894.

Harry Alonzo Cushing, A.B., Amherst College, 1891.	Subject,	History
Herman Stearns Davis, A.B., Princeton College, 1892.	"	Astronomy
Arthur Cleveland Hall, A.B., Trinity College, 1888; A.M., 1893.	"	Sociology
* Matthew B. Hammond, Ph.B., University of Michigan, 1891.	"	Finance
William Addison Hervey, A.B., Columbia College, 1893.	"	Germanic Languages
Judah Joffe, A.B., Columbia College, 1893.	"	Comparative Philology
Herbert McLeod Johnstone, A.B., Columbia College, 1894.	"	Literature
Wilfrid Lay, A.B., Columbia College, 1893.	"	Philosophy
George Herbert Ling, A.B., University of Toronto, 1893.	"	Mathematics
Isidor Loeb, B.S., University of Missouri, 1887; M.S., LL.B., 1893.	"	Jurisprudence
Frederic Ludlow Luqueer, A.B., Columbia College, 1894.	"	Education
William Diller Matthew, A.B., University of New Brunswick, (Canada), 1889; Ph.B., Columbia College, 1893.	"	Geology
Albert Prescott Matthews, B.S., Massachusetts Institute of Technology, 1892.	"	Biology
Samuel Paul Mueller, Testimonium Maturitatis, Karl May Gymnasium, St. Petersburg (Russia), 1878.	"	Romance Languages
George N. Olcott, A.B., Columbia College, 1893.	"	Latin
Heinrich Ries, Ph.B., Columbia College, 1892.	"	Mineralogy
Charles F. Rittenhouse, M.E., Stevens Institute, 1893.	"	Electricity
Albert Schneider, University of Illinois, 1894.	"	Botany
William Robert Shepherd, A.B., Columbia College, 1893.	"	History
Charles W. Tooke, A.B., Syracuse University, 1891.	"	Administrative Law

* Appointed May 15, 1894.

Annual Fellows

James B. Reynolds, A.B.
Henry Gustavus Vick, A.B.
Daniel A. Long, A.M., D.D., LL.D.

Barnard Fellow

William Lispenard Robb, Ph.D.

Henry Drisler Fellow

John Kasson Lathrop, A.B.

Alumni Association Fellows

Frederick J. Brockway, M.D.
Richard J. H. Cunningham, M.D.
William S. Stone, M.D.

John Tyndall Fellow

Charles Riborg Mann, A.M.

McKim Fellows

George Oakley Totten, Jr., A.M.
William Lincoln Thorne, Ph.B.

Columbia Fellow

Seth Justin Temple, Ph.B.

Seligman Fellow

Alonzo Clark Scholar

Ira T. Van Gieson, M.D.

Academic Calendar

Attention is called to the change of date of entrance examinations.

1894—Oct. 1.—First term, 141st year, begins, Monday.
Nov. 6.—Election day, holiday.
Nov. 29.—Thanksgiving day, Thursday, holiday.
Dec. 24.—Christmas holidays begin, Monday.
1895—Jan. 5.—Christmas holidays end, Saturday.
Jan. 28.—Mid-year examinations begin, Monday.
Feb. 9.—First term ends, Saturday.
Feb. 11.—Second term begins, Monday.
Feb. 22.—Washington's birthday, Friday, holiday.
Feb. 27.—Ash-Wednesday, holiday.
April 12.—Good-Friday, holiday.
May 20.—Concluding examinations begin, Monday.
May 30.—Memorial day, Thursday, holiday.
June 12.—Commencement, Wednesday. School of Mines, examinations for admission begin.
June 13.—School of Arts, examinations for admission begin, Thursday.
June 15.—Examinations for admission end, Saturday.
Sept. 30.—Examinations for admission begin, Monday.
Oct. 2.—Matriculation and registration begin, Wednesday.
Oct. 7.—First term, 142d year begins, Monday.

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